

# **EXHIBIT D**

## Exhibit Copying-3 -- Evidence of Output Copying

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<p>Cisco IOS XE 3.5</p> <p>Effective date of registration: 11/24/2014</p>	<pre>Router# show interfaces atm 0/0/0 ATM0/0/0 is up, line protocol is up Hardware is cyBus ATM Internet address is 10.1.1.1/24 MTU 4470 bytes, sub MTU 4470, BW 156250 Kbit, DLY 80 usec, rely 255/255, load 1/255 Encapsulation ATM, loopback not set, keepalive set (10 sec) Encapsulation(s): AAL5, PVC mode 256 TX buffers, 256 RX buffers, 2048 maximum active VCs, 1024 VCs per VP, 1 current VCCs VC idle disconnect time: 300 seconds Last input never, output 00:00:05, output hang never Last clearing of "show interface" counters never Queueing strategy: fifo Output queue 0/40, 0 drops; input queue 0/75, 0 drops 5 minute input rate 0 bits/sec, 1 packets/sec 5 minute output rate 0 bits/sec, 1 packets/sec 5 packets input, 560 bytes, 0 no buffer Received 0 broadcasts, 0 runts, 0 giants 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 5 packets output, 560 bytes, 0 underruns 0 output errors, 0 collisions, 0 interface resets 0 output buffer failures, 0 output buffers swapped out</pre> <p>Cisco IOS Asynchronous Transfer Mode Command Reference (2011), at 476</p>	<p>Examples</p> <ul style="list-style-type: none"> <li>These commands display interface counters, clear the counters, then display the counters again.</li> </ul> <pre>switch#show interfaces ethernet 1 Ethernet1 is up, line protocol is up (connected) Hardware is Ethernet, address is 001c.7302.2fff (bia 001c.7302.2fff) MTU 9212 bytes, BW 10000000 Kbit Full-duplex, 10Gb/s, auto negotiation: off Last clearing of "show interface" counters never 5 minutes input rate 0 bps (0.0% with framing), 0 packets/sec 5 minutes output rate 0 bps (0.0% with framing), 0 packets/sec 2285370854005 packets input, 225028582832583 bytes Received 29769609741 broadcasts, 3073437605 multicast 113 runts, 1 giants 118 input errors, 117 CRC, 0 alignment, 18 symbol 27511409 PAUSE input 335031607678 packets output, 27845413138330 bytes Sent 14282316688 broadcasts, 54045824072 multicast 108 output errors, 0 collisions 0 late collision, 0 deferred 0 PAUSE output</pre> <p>Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 413.  Arista User Manual v. 4.11.2.1 (3/1/2013), at 447.  Arista User Manual v. 4.12.4 (9/16/2013), at 533.  Arista User Manual v. 4.13.6F (4/14/2014), at 637.  Arista User Manual v. 4.13.7M (6/17/2014), at 638.  Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 646.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 648.  Arista User Manual v. 4.14.6M (1/19/2015), at 644.  Arista User Manual v. 4.15.0F (4/18/2015), at 652.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 644.</p>

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<p>Cisco IOS 12.4</p> <p>Effective date of registration: 8/12/2005</p>	<p>Router# <b>show ip route</b></p> <div data-bbox="302 326 1142 488" style="border: 1px solid red; padding: 5px;"> <p>Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP  D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area  N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2  E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP  i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2  ia - IS-IS inter area, * - candidate default, U - per-user static route  o - ODR, P - periodic downloaded static route</p> </div> <p>Gateway of last resort is not set</p> <p>Cisco IOS IP Routing Protocols Command Reference, Release 12.4 (2005), at IP2R-553</p>	<p>IPv4 Routing <span style="float: right;">Chapter 23 IPv4</span></p> <p>Examples</p> <ul style="list-style-type: none"> <li>This command displays IP routes learned through BGP.</li> </ul> <div data-bbox="1297 358 1772 440" style="border: 1px solid red; padding: 5px;"> <p>switch#<b>show ip route bgp</b></p> <p>Codes: C - connected, S - static, K - kernel,  O - OSPF, IA - OSPF inter area, E1 - OSPF external type 1,  E2 - OSPF external type 2, N1 - OSPF NSSA external type 1,  N2 - OSPF NSSA external type2, B I - iBGP, B E - eBGP,  R - RIP, A - Aggregate</p> </div> <pre> B E 170.44.48.0/23 [20/0] via 170.44.254.78 B E 170.44.50.0/23 [20/0] via 170.44.254.78 B E 170.44.52.0/23 [20/0] via 170.44.254.78 B E 170.44.54.0/23 [20/0] via 170.44.254.78 B E 170.44.254.112/30 [20/0] via 170.44.254.78 B E 170.53.0.34/32 [1/0] via 170.44.254.78 B I 170.53.0.35/32 [1/0] via 170.44.254.2                         via 170.44.254.13                         via 170.44.254.20                         via 170.44.254.67                         via 170.44.254.35                         via 170.44.254.98 </pre> <p>switch&gt;</p> <p>Arista User Manual v. 4.10.0 (7/19/2012), at 617.  Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 840.  Arista User Manual v. 4.11.2.1 (3/1/2013), at 880.  Arista User Manual v. 4.12.4 (9/16/2013), at 1085.  Arista User Manual v. 4.13.6F (4/14/2014), at 1188.  Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 1228.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1250.  Arista User Manual v. 4.14.6M (1/19/2015), at 1246.  Arista User Manual v. 4.15.0F (4/18/2015), at 1254.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1248.  Arista User Manual v. 4.13.7M (6/17/2014), at 1206.</p>

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<p>Cisco IOS 15.2</p> <p>Effective date of registration:</p> <p>11/24/2014</p>	<p><b>Usage Guidelines</b> This command provides counter information for SNMP operations. It also displays the chassis ID string defined with the <code>snmp-server chassis-id</code> global configuration command.</p> <p><b>Command Examples</b> The following is sample output from the <code>show snmp</code> command:</p> <pre> Router# show snmp Chassis: 12161083 0 SNMP packets input   0 Bad SNMP version errors   0 Unknown community name   0 Illegal operation for community name supplied   0 Encoding errors   0 Number of requested variables   0 Number of altered variables   0 Get-request PDUs   0 Get-next PDUs   0 Set-request PDUs   0 Input queue packet drops (Maximum queue size 1000) 0 SNMP packets output   0 Too big errors (Maximum packet size 1500)   0 No such name errors   0 Bad values errors   0 General errors   0 Response PDUs   0 Trap PDUs SNMP logging: enabled </pre> <p>Cisco IOS SNMP Support Command Reference (2011), at 95-96</p>	<p><b>Configuring SNMP</b> Chapter 37 SNMP</p> <pre> 8 SNMP packets input   0 Bad SNMP version errors   0 Unknown community name   0 Illegal operation for community name supplied   0 Encoding errors   8 Number of requested variables   0 Number of altered variables   4 Get-request PDUs   4 Get-next PDUs   0 Set-request PDUs 21 SNMP packets output   0 Too big errors   0 No such name errors   0 Bad value errors   0 General errors   8 Response PDUs   0 Trap PDUs SNMP logging: enabled   Logging to taccon.162 SNMP agent enabled switch(config)# </pre> <p>Arista User Manual v. 4.10.0 (7/19/2012), at 1043.  Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 1353.  Arista User Manual v. 4.11.2.1 (3/1/2013), at 1433.  Arista User Manual v. 4.12.4 (9/16/2013), at 1706.  Arista User Manual v. 4.13.6F (4/14/2014), at 1896.  Arista User Manual v. 4.13.7M (6/17/2014), at 1924.  Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 1968.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1982.  Arista User Manual v. 4.14.6M (1/19/2015), at 1978.  Arista User Manual v. 4.15.0F (4/18/2015), at 1986.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1980.</p>

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Cisco IOS 15.2  Effective date of registration:  11/24/2014	<p><b>Command Examples</b> This example shows the output from the <code>show port-security</code> command when you do not enter any options:</p> <pre>Router# show port-security</pre> <table><thead><tr><th>Secure Port Action</th><th>MaxSecureAddr (Count)</th><th>CurrentAddr (Count)</th><th>SecurityViolation (Count)</th><th>Security Action</th></tr></thead><tbody><tr><td>Fa5/1</td><td>11</td><td>11</td><td>0</td><td>Shutdown</td></tr><tr><td>Fa5/5</td><td>15</td><td>5</td><td>0</td><td>Restrict</td></tr><tr><td>Fa5/11</td><td>5</td><td>4</td><td>0</td><td>Protect</td></tr></tbody></table> <p>-----</p> <p>Total Addresses in System: 21 Max Addresses limit in System: 128 Router#</p> <p>Cisco IOS Security Command Reference Commands S to Z (July 2011), at 692</p>	Secure Port Action	MaxSecureAddr (Count)	CurrentAddr (Count)	SecurityViolation (Count)	Security Action	Fa5/1	11	11	0	Shutdown	Fa5/5	15	5	0	Restrict	Fa5/11	5	4	0	Protect	<p><b>Example</b></p> <ul style="list-style-type: none"><li>These commands enable MAC security on Ethernet interface 7, set the maximum number of assigned MAC addresses to 2, assigns two static MAC addresses to the interface, and clears the dynamic MAC addresses for the interface.</li></ul> <pre>switch(config)#interface ethernet 7 switch(config-if-Et7)#switchport port-security switch(config-if-Et7)#switchport port-security maximum 2 switch(config-if-Et7)#exit switch(config)#mac address-table static 0034.24c2.8f11 vlan 10 interface ethernet 7 switch(config)#mac address-table static 4464.842d.17ce vlan 10 interface ethernet 7 switch(config)#clear mac address-table dynamic interface ethernet 7 switch(config)#show port-security</pre> <table><thead><tr><th>Secure Port Action</th><th>MaxSecureAddr (Count)</th><th>CurrentAddr (Count)</th><th>SecurityViolation (Count)</th><th>Security Action</th></tr></thead><tbody><tr><td>Et7</td><td>2</td><td>2</td><td>0</td><td>Shutdown</td></tr></tbody></table> <p>-----</p> <p>Arista User Manual v. 4.10.0 (7/19/2012), at 318. Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 405-406. Arista User Manual v. 4.11.2.1 (3/1/2013), at 439. Arista User Manual v. 4.12.4 (9/16/2013), at 520. Arista User Manual v. 4.13.6F (4/14/2014), at 624. Arista User Manual v. 4.13.7M (6/17/2014), at 624. Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 632. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 634. Arista User Manual v. 4.14.6M (1/19/2015), at 630. Arista User Manual v. 4.15.0F (4/18/2015), at 638. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 630.</p>	Secure Port Action	MaxSecureAddr (Count)	CurrentAddr (Count)	SecurityViolation (Count)	Security Action	Et7	2	2	0	Shutdown
	Secure Port Action	MaxSecureAddr (Count)	CurrentAddr (Count)	SecurityViolation (Count)	Security Action																											
Fa5/1	11	11	0	Shutdown																												
Fa5/5	15	5	0	Restrict																												
Fa5/11	5	4	0	Protect																												
Secure Port Action	MaxSecureAddr (Count)	CurrentAddr (Count)	SecurityViolation (Count)	Security Action																												
Et7	2	2	0	Shutdown																												

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<p>Cisco IOS 15.4</p> <p>Effective date of registration: 11/26/2014</p>	<pre>Router# show interface cbr 6/0 CBR6/0 is up, line protocol is up Hardware is DCU MTU 0 bytes, BW 1544 Kbit, DLY 0 usec, rely 255/255, load 248/255 Encapsulation ET ATMCES_T1, loopback not set Last input 00:00:00, output 00:00:00, output hang never Last clearing of "show interface" counters never Queueing strategy: fifo Output queue 0/0, 0 drops; input queue 0/75, 0 drops 5 minute input rate 1507000 bits/sec, 3957 packets/sec 5 minute output rate 1507000 bits/sec, 3955 packets/sec 3025960 packets input, 142220120 bytes, 0 no buffer Received 0 broadcasts, 0 runs, 0 giants 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort 3030067 packets output, 142413149 bytes, 0 underruns 0 output errors, 0 collisions, 0 interface resets 0 output buffer failures, 0 output buffers swapped out</pre> <p>The table below describes the fields shown in the display.</p> <p>Cisco IOS Asynchronous Transfer Mode Command Reference (2013), at 460</p>	<pre>switch#show interfaces ethernet 1 Ethernet1 is up, line protocol is up (connected) Hardware is Ethernet, address is 001c.7302.2fff (bia 001c.7302.2fff) MTU 9212 bytes, BW 10000000 Kbit Full-duplex, 10Gb/s, auto negotiation: off Last clearing of "show interface" counters never 5 minutes input rate 301 bps (0.0% with framing), 0 packets/sec 5 minutes output rate 0 bps (0.0% with framing), 0 packets/sec 2285370854005 packets input, 225028582832583 bytes Received 29769609741 broadcasts, 3073437605 multicast 113 runs, 1 giants 118 input errors, 117 CRC, 0 alignment, 18 symbol 27511409 PAUSE input 335031607678 packets output, 27845413138330 bytes Sent 14282316688 broadcasts, 54045824072 multicast 108 output errors, 0 collisions 0 late collision, 0 deferred 0 PAUSE output</pre> <p>Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 413.  Arista User Manual v. 4.11.2.1 (3/1/2013), at 447.  Arista User Manual v. 4.12.4 (9/16/2013), at 533.  Arista User Manual v. 4.13.6F (4/14/2014), at 637.  Arista User Manual v. 4.13.7M (6/17/2014), at 638.  Arista User Manual v. 4.14.3F - Rev. 2 (10/2/14), at 646  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 648.  Arista User Manual v. 4.14.6M (1/19/2015), at 644.  Arista User Manual v. 4.15.0F (4/18/2015), at 652.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 644.</p>

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<p>Cisco IOS 15.4</p> <p>Effective date of registration: 11/26/2014</p>	<pre>Router# show interfaces Ethernet0/0 is up, line protocol is up Hardware is AmdP2, address is aabb.cc03.6c00 (bia aabb.cc03.6c00) Internet address is 172.17.1.1/16 MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,     reliability 255/255, txload 1/255, rxload 1/255 Encapsulation ARPA, loopback not set Keepalive set (10 sec) ARP type: ARPA, ARP Timeout 04:00:00 Last input never, output 00:00:06, output hang never Last clearing of "show interface" counters never Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0 Queueing strategy: fifo Output queue: 0/40 (size/max) 5 minute input rate 0 bits/sec, 0 packets/sec 5 minute output rate 0 bits/sec, 0 packets/sec   0 packets input, 0 bytes, 0 no buffer   Received 0 broadcasts, 0 runts, 0 giants, 0 throttles   0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored   0 input packets with dribble condition detected   11 packets output, 1648 bytes, 0 underruns   0 output errors, 0 collisions, 1 interface resets   0 babbles, 0 late collision, 0 deferred   0 lost carrier, 0 no carrier   0 output buffer failures, 0 output buffers swapped out</pre> <p>Cisco Configuration Fundamentals Configuration Guide, Cisco IOS Release 15M&amp;T (2013), at 44</p>	<pre>switch#show interfaces ethernet 1 Ethernet1 is up, line protocol is up (connected) Hardware is Ethernet, address is 001c.7302.2fff (bia 001c.7302.2fff) MTU 9212 bytes, BW 10000000 Kbit Full-duplex, 10Gb/s, auto negotiation: off Last clearing of "show interface" counters never 5 minutes input rate 301 bps (0.0% with framing), 0 packets/sec 5 minutes output rate 0 bps (0.0% with framing), 0 packets/sec 2285370854005 packets input, 225028582832583 bytes Received 29769609741 broadcasts, 3073437605 multicast 113 runts, 1 giants 118 input errors, 117 CRC, 0 alignment, 18 symbol 27511409 PAUSE input 335031607678 packets output, 27845413138330 bytes Sent 14282316688 broadcasts, 54045824072 multicast 108 output errors, 0 collisions 0 late collision, 0 deferred 0 PAUSE output</pre> <p>Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 413.  Arista User Manual v. 4.11.2.1 (3/1/2013), at 447.  Arista User Manual v. 4.12.4 (9/16/2013), at 533.  Arista User Manual v. 4.13.6F (4/14/2014), at 637.  Arista User Manual v. 4.13.7M (6/17/2014), at 638.  Arista User Manual v. 4.14.3F - Rev. 2 (10/2/14), at 646.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 648.  Arista User Manual v. 4.14.6M (1/19/2015), at 644.  Arista User Manual v. 4.15.0F (4/18/2015), at 652.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 644.</p>

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<p>Cisco IOS 15.4</p> <p>Effective date of registration: 11/26/2014</p>	<p>Use the <code>show interface interface-type interface-number</code> command to display the information and statistics for Ethernet 0 on R4.</p> <pre>R4&gt; show interface ethernet 0 Ethernet0 is up, line protocol is up   Hardware is Lance, address is 00e0.1eb8.eb0e (bia 00e0.1eb8.eb0e) The MAC address for Ethernet 0 on R4 is 00e0.1eb8.eb0e. The format of the client identifier for this interface is nullcisco-00e0.1eb8.eb0e-et0.</pre> <p>Cisco Configuration Fundamentals Configuration Guide, Cisco IOS Release 15M&amp;T (2013), at 81</p>	<p>This command assigns the MAC address of 001c.2804.17e1 to Ethernet interface 7, then displays interface parameters, including the assigned address.</p> <pre>switch(config)#interface ethernet 7 switch(config-if-Et7)#mac-address 001c.2804.17e1 switch(config-if-Et7)#show interface ethernet 7 Ethernet3 is up, line protocol is up (connected)   Hardware is Ethernet, address is 001c.2804.17e1 (bia 001c.7312.02e2)</pre> <p>Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 312.  Arista User Manual v. 4.11.2.1 (3/1/2013), at 342.  Arista User Manual v. 4.12.4 (9/16/2013), at 390.  Arista User Manual v. 4.13.6F (4/14/2014), at 429.  Arista User Manual v. 4.13.7M (6/17/2014), at 429.  Arista User Manual v. 4.14.3F - Rev. 2 (10/2/14), at 437  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 439.  Arista User Manual v. 4.14.6M (1/19/2015), at 435.  Arista User Manual v. 4.15.0F (4/18/2015), at 443.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 435.</p>



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<p>Cisco IOS 15.4</p> <p>Effective date of registration: 11/26/2014</p>	<p><b>show ip igmp snooping</b></p> <p>To display the Internet Group Management Protocol (IGMP) snooping configuration of a device, use the <b>show ip igmp snooping</b> command in user EXEC or privileged EXEC mode.</p> <p><b>show ip igmp snooping</b> [groups [count] vlan vlan-id [ip-address] count]] mrouter [[vlan vlan-id]] [bd bd-id]] [querier vlan vlan-id  bd bd-id]</p> <p>Cisco IOS Multicast Command Reference at 625 (2013)</p> <p>The following is sample output from the <b>show ip igmp snooping</b> command:</p> <pre>Router# show ip igmp snooping Global IGMP Snooping configuration: ----- IGMP snooping                : Enabled IGMPv3 snooping (minimal)    : Enabled Report suppression           : Enabled TCN solicit query             : Disabled TCN flood query count         : 2 Last Member Query Interval    : 1000</pre> <p>IOS Multicast Command Reference (2013), at 625</p>	<p><b>IGMP Snooping Status</b></p> <p>The <b>show ip igmp snooping</b> command displays the Internet Group Management Protocol (IGMP) snooping configuration of a device.</p> <p><b>Example</b></p> <ul style="list-style-type: none"> <li>This command displays the switch's IGMP snooping configuration.</li> </ul> <pre>switch&gt;show ip igmp snooping Global IGMP Snooping configuration: ----- IGMP snooping                : Enabled Robustness variable           : 2</pre> <p>Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 1263.  Arista User Manual v. 4.11.2.1 (3/1/2013), at 1339.  Arista User Manual v. 4.12.4 (9/16/2013), at 1559.  Arista User Manual v. 4.13.6F (4/14/2014), at 1733.  Arista User Manual v. 4.13.7M (6/17/2014), at 1810.  Arista User Manual v. 4.14.3F - Rev. 2 (10/2/14), at 1785.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1799.  Arista User Manual v. 4.14.6M (1/19/2015), at 1794.  Arista User Manual v. 4.15.0F (4/18/2015), at 1803.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1797.</p>

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Cisco IOS 15.4  Effective date of registration: 11/26/2014	<div>show interfaces transceiver</div> <p>To display information about the optical transceivers that have digital optical monitoring (DOM) enabled, use the show interfaces transceiver command in privileged EXEC mode.</p> <p>Catalyst 6500 Series Switches and Cisco 7600 Series Routers</p> <div>show interfaces [interface interface-number] transceiver [threshold violations] properties [detail] module number</div> <p>Cisco 7200 VXR</p> <div>show interfaces [interface interface-number] transceiver</div> <p>Cisco ASR 901 Routers</p> <div>show interfaces [interface interface-number] transceiver [threshold {table   violations}   detail   supported-list]</div> <p>Cisco IOS Interfaces and Hardware Component Command Reference (2013), at 1878</p> <div>Examples</div> <p>This example shows how to display transceiver information:</p> <div>Router# show interfaces transceiver If device is externally calibrated, only calibrated values are printed. ++ : high alarm, + : high warning, - : low warning, -- : low alarm. NA or N/A: not applicable, Tx: transmit, Rx: receive. mA: milliamperes, dBm: decibels (milliwatts).</div> <table><thead><tr><th>Port</th><th>Temperature (Celsius)</th><th>Voltage (Volts)</th><th>Current (mA)</th><th>Optical Tx Power (dBm)</th><th>Optical Rx Power (dBm)</th></tr></thead><tbody><tr><td>Gi1/1</td><td>40.6</td><td>5.09</td><td>0.4</td><td>-25.2</td><td>N/A</td></tr><tr><td>Gi2/1</td><td>35.5</td><td>5.05</td><td>0.1</td><td>-29.2</td><td>N/A</td></tr><tr><td>Gi2/2</td><td>49.5</td><td>3.30</td><td>0.0</td><td>7.1</td><td>-18.7</td></tr></tbody></table> <p>Cisco IOS Interfaces and Hardware Component Command Reference (2013), at 1879</p>	Port	Temperature (Celsius)	Voltage (Volts)	Current (mA)	Optical Tx Power (dBm)	Optical Rx Power (dBm)	Gi1/1	40.6	5.09	0.4	-25.2	N/A	Gi2/1	35.5	5.05	0.1	-29.2	N/A	Gi2/2	49.5	3.30	0.0	7.1	-18.7	<div>show interfaces transceiver</div> <p>The show interfaces transceiver command displays operational transceiver data for the specified interfaces.</p> <p>Platform all Command Mode EXEC</p> <p>Command Syntax</p> <div>show interfaces [INTERFACE] transceiver [DATA_FORMAT]</div> <p>...</p> <div>Examples</div> <ul style="list-style-type: none"><li>This command displays transceiver data on Ethernet interfaces 1 through 4.</li></ul> <div>switch&gt;show interfaces ethernet 1-4 transceiver If device is externally calibrated, only calibrated values are printed. N/A: not applicable, Tx: transmit, Rx: receive. mA: milliamperes, dBm: decibels (milliwatts).</div> <table><thead><tr><th>Port</th><th>Temp (Celsius)</th><th>Voltage (Volts)</th><th>Bias Current (mA)</th><th>Optical Tx Power (dBm)</th><th>Optical Rx Power (dBm)</th><th>Last Update (Date Time)</th></tr></thead><tbody><tr><td>Et1</td><td>34.17</td><td>3.30</td><td>6.75</td><td>-2.41</td><td>-2.83</td><td>2011-12-02 16:18:48</td></tr><tr><td>Et2</td><td>35.08</td><td>3.30</td><td>6.75</td><td>-2.23</td><td>-2.06</td><td>2011-12-02 16:18:42</td></tr><tr><td>Et3</td><td>36.72</td><td>3.30</td><td>7.20</td><td>-2.02</td><td>-2.14</td><td>2011-12-02 16:18:49</td></tr><tr><td>Et4</td><td>35.91</td><td>3.30</td><td>6.92</td><td>-2.20</td><td>-2.23</td><td>2011-12-02 16:18:45</td></tr></tbody></table> <div>switch&gt;</div> <p>Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 326. Arista User Manual v. 4.11.2.1 (3/1/2013), at 356. Arista User Manual v. 4.12.4 (9/16/2013), at 404. Arista User Manual v. 4.13.6F (4/14/2014), at 443. Arista User Manual v. 4.13.7M (6/17/2014), at 443. Arista User Manual v. 4.14.3F - Rev. 2 (10/2/14), at 451. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 453. Arista User Manual v. 4.14.6M (1/19/2015), at 449. Arista User Manual v. 4.15.0F (4/18/2015), at 457. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 449.</p>	Port	Temp (Celsius)	Voltage (Volts)	Bias Current (mA)	Optical Tx Power (dBm)	Optical Rx Power (dBm)	Last Update (Date Time)	Et1	34.17	3.30	6.75	-2.41	-2.83	2011-12-02 16:18:48	Et2	35.08	3.30	6.75	-2.23	-2.06	2011-12-02 16:18:42	Et3	36.72	3.30	7.20	-2.02	-2.14	2011-12-02 16:18:49	Et4	35.91	3.30	6.92	-2.20	-2.23	2011-12-02 16:18:45
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<p>Cisco IOS 15.4</p> <p>Effective date of registration: 11/26/2014</p>	<div data-bbox="310 297 1087 415"> <div> <i>start-ip</i> <div>Starting IP address that defines the range of addresses in the address pool.</div> </div> <div> <i>end-ip</i> <div>Ending IP address that defines the range of addresses in the address pool.</div> </div> </div> <p>Cisco IOS IP Addressing Services Command Reference at 22 (2011)</p>	<div data-bbox="1182 272 2043 391"> <div> <i>start_addr</i> <div>The starting IP address that defines the range of addresses in the address pool (IPv4 addresses in dotted decimal notation).</div> </div> <div> <i>end_addr</i> <div>The ending IP address that defines the range of addresses in the address pool. (IPv4 addresses in dotted decimal notation).</div> </div> </div> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 1121.  Arista User Manual v. 4.13.6F (4/14/2014), at 1233.  Arista User Manual v. 4.13.7M (6/17/2014), at 1251.  Arista User Manual v. 4.14.3F - Rev. 2 (10/2/2014), at 1278  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1299.  Arista User Manual v. 4.14.6M (1/19/2015), at 1295.  Arista User Manual v. 4.15.0F (4/18/2015), at 1303.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1297.</p>

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<p>Cisco IOS 15.4</p> <p>Effective date of registration: 11/26/2014</p>	<p>The following is sample output from the <code>show ip ospf</code> command when entered without a specific OSPF process ID:</p> <pre> Router# show ip ospf Routing Process "ospf 201" with ID 10.0.0.1 and Domain ID 10.20.0.1 Supports only single IOS(1050) routes Supports opaque LSA SPF schedule delay 5 secs, Hold time between two SPFs 10 secs Minimum LSA interval 5 secs. Minimum LSA arrival 1 secs LSA group pacing timer 100 secs Interface flood pacing timer 55 msecs Retransmission pacing timer 100 msecs Number of external LSA 0. Checksum Sum 0x0 Number of opaque AS LSA 0. Checksum Sum 0x0 Number of DCbitless external and opaque AS LSA 0 Number of DoNotAge external and opaque AS LSA 0 Number of areas in this router is 2. 2 normal 0 stub 0 nssa External flood list length 0 Area BACKBONE(0) Number of interfaces in this area is 2 Area has message digest authentication SPF algorithm executed 4 times Area ranges are Number of LSA 4. Checksum Sum 0x29BEB Number of opaque link LSA 0. Checksum Sum 0x0 Number of DCbitless LSA 3 Number of indication LSA 0 Number of DoNotAge LSA 0 Flood list length 0 Area 172.16.26.0 Number of interfaces in this area is 0 Area has no authentication SPF algorithm executed 1 times Area ranges are 192.168.0.0/16 Passive Advertise Number of LSA 1. Checksum Sum 0x44FD Number of opaque link LSA 0. Checksum Sum 0x0 Number of DCbitless LSA 1 Number of indication LSA 1 Number of DoNotAge LSA 0 Flood list length 0 </pre> <p>Cisco IOS IP Routing:OSPF Command Reference (2013), at 174</p>	<pre> switch#show ip ospf Routing Process "ospf 1" with ID 10.168.103.1 Supports opaque LSA Maximum number of LSA allowed 12000 Threshold for warning message 75% Ignore-time 5 minutes, reset-time 5 minutes Ignore-count allowed 5, current 0 It is an area border router Hold time between two consecutive SPFs 5000 msecs SPF algorithm last executed 00:00:09 ago Minimum LSA interval 5 secs Minimum LSA arrival 1000 msecs Number of external LSA 0. Checksum Sum 0x000000 Number of opaque AS LSA 0. Checksum Sum 0x000000  Number of LSA 27. Number of areas in this router is 3. 3 normal 0 stub 0 nssa Area BACKBONE(0.0.0.0) Number of interfaces in this area is 2 It is a normal area Area has no authentication SPF algorithm executed 153 times Number of LSA 8. Checksum Sum 0x03e13a Number of opaque link LSA 0. Checksum Sum 0x000000 Area 0.0.0.2 Number of interfaces in this area is 1 It is a normal area Area has no authentication SPF algorithm executed 153 times Number of LSA 11. Checksum Sum 0x054e57 Number of opaque link LSA 0. Checksum Sum 0x000000 Area 0.0.0.3 Number of interfaces in this area is 1 It is a normal area Area has no authentication SPF algorithm executed 5 times Number of LSA 6. Checksum Sum 0x02a401 Number of opaque link LSA 0. Checksum Sum 0x000000 </pre> <p>Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 947.  Arista User Manual v. 4.11.2.1 (3/1/2013), at 991.  Arista User Manual v. 4.12.4 (9/16/2013), at 1226.  Arista User Manual v. 4.13.6F (4/14/2014), at 1341-1342.  Arista User Manual v. 4.13.7M (6/17/2014), at 1359-1360.  Arista User Manual v. 4.14.3F (Rev. 2) (10/2/2014), at 1391-1392.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1413.  Arista User Manual v. 4.14.6M (1/19/2015), at 1409.  Arista User Manual v. 4.15.0F (4/18/2015), at 1417.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1411.</p>

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<p>Cisco IOS 15.4</p> <p>Effective date of registration: 11/26/2014</p>	<p><b>Examples</b></p> <p>The following is sample output from the <code>show snmp</code> command:</p> <pre> Router# show snmp Chassis: 12161083 0 SNMP packets input   0 Bad SNMP version errors   0 Unknown community name   0 Illegal operation for community name supplied   0 Encoding errors   0 Number of requested variables   0 Number of altered variables   0 Get-request PDUs   0 Get-next PDUs   0 Set-request PDUs   0 Input queue packet drops (Maximum queue size 1000) 0 SNMP packets output   0 Too big errors (Maximum packet size 1500)   0 No such name errors   0 Bad values errors   0 General errors   0 Response PDUs   0 Trap PDUs SNMP logging: enabled SNMP trap Queue: 0 dropped due to resource failure. </pre> <p>Cisco IOS SNMP Support Command Reference (2013), at 83</p>	<p><b>Example</b></p> <ul style="list-style-type: none"> <li>This command configures <code>xyz-1234</code> as the chassis-ID string, then displays the result.</li> </ul> <pre> switch(config)#snmp-server chassis-id xyz-1234 switch(config)#show snmp Chassis: xyz-1234 &lt;---chassis ID  8 SNMP packets input   0 Bad SNMP version errors   0 Unknown community name   0 Illegal operation for community name supplied   0 Encoding errors   8 Number of requested variables   0 Number of altered variables   4 Get-request PDUs   4 Get-next PDUs   0 Set-request PDUs 21 SNMP packets output   0 Too big errors   0 No such name errors   0 Bad value errors   0 General errors   8 Response PDUs   0 Trap PDUs SNMP logging: enabled Logging to taccon.162 SNMP agent enabled switch(config)# </pre> <p>Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 1352-1353.  Arista User Manual v. 4.11.2.1 (3/1/2013), at 1432-1433.  Arista User Manual v. 4.12.4 (9/16/2013), at 1705-1706.  Arista User Manual v. 4.13.6F (4/14/2014), at 1895-1896.  Arista User Manual v. 4.13.7M (6/17/2014), at 1923-1924.  Arista User Manual v. 4.14.3F (Rev. 2) (10/2/2014), at 1967-68.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1981-82.  Arista User Manual v. 4.14.6M (1/19/2015), at 1977-1978.  Arista User Manual v. 4.15.0F (4/18/2015), at 1985-1986.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1979-1980</p>

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<div>Cisco NX-OS 6.2</div> <div>Effective date of registration: 11/13/2014</div>	<table><tr><td>IGMP version</td><td>2</td></tr><tr><td>Startup query interval</td><td>30 seconds</td></tr><tr><td>Startup query count</td><td>2</td></tr><tr><td>Robustness value</td><td>2</td></tr><tr><td>Querier timeout</td><td>255 seconds</td></tr><tr><td>Query timeout</td><td>255 seconds</td></tr><tr><td>Query max response time</td><td>10 seconds</td></tr><tr><td>Query interval</td><td>125 seconds</td></tr><tr><td>Last member query response interval</td><td>1 second</td></tr><tr><td>Last member query count</td><td>2</td></tr><tr><td>Group membership timeout</td><td>260 seconds</td></tr><tr><td>Report link local multicast groups</td><td>Disabled</td></tr><tr><td>Enforce router alert</td><td>Disabled</td></tr><tr><td>Immediate leave</td><td>Disabled</td></tr></table>	IGMP version	2	Startup query interval	30 seconds	Startup query count	2	Robustness value	2	Querier timeout	255 seconds	Query timeout	255 seconds	Query max response time	10 seconds	Query interval	125 seconds	Last member query response interval	1 second	Last member query count	2	Group membership timeout	260 seconds	Report link local multicast groups	Disabled	Enforce router alert	Disabled	Immediate leave	Disabled	<div><div>Current IGMP router version: 2 IGMP query interval: 125 seconds IGMP max query response time: 100 deciseconds Last member query response interval: 10 deciseconds Last member query response count: 2 IGMP querier: 172.17.26.1 Robustness: 2 Require router alert: enabled Startup query interval: 312 deciseconds Startup query count: 2 General query timer expiry: 00:00:22 Multicast groups joined: 239.255.255.250</div><div>Arista User Manual v. 4.10.0 (7/19/2012), at 970. Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 1261. Arista User Manual v. 4.11.2.1 (3/1/2013), at 1337. Arista User Manual v. 4.12.4 (9/16/2013), at 1606. Arista User Manual v. 4.13.6F (4/14/2014), at 1780. Arista User Manual v. 4.13.7M (6/17/2014), at 1808. Arista User Manual v. 4.14.3F - Rev. 2 (10/2/14), at 1850. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1864. Arista User Manual v. 4.14.6M (1/19/2015), at 1860. Arista User Manual v. 4.15.0F (4/18/2015), at 1868. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1862.</div></div>
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	Query max response time	10 seconds																												
	Query interval	125 seconds																												
	Last member query response interval	1 second																												
	Last member query count	2																												
	Group membership timeout	260 seconds																												
	Report link local multicast groups	Disabled																												
	Enforce router alert	Disabled																												
	Immediate leave	Disabled																												



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<p>Cisco NX-OS 6.2</p> <p>Effective date of registration: 11/13/2014</p>	<p><b>Examples</b></p> <p>This example shows how to display VTP interface switchport information on the device:</p> <pre>switch# show interface switchport Name: Ethernet8/11 Switchport: Enabled Switchport Monitor: Not enabled Operational Mode: trunk Access Mode VLAN: 1 (default) Trunking Native Mode VLAN: 1 (default) Trunking VLANs Enabled: 1,10,20-30 Pruning VLANs Enabled: 2-1001 Administrative private-vlan primary host-association: none Administrative private-vlan secondary host-association: none Administrative private-vlan primary mapping: none Administrative private-vlan secondary mapping: none Administrative private-vlan trunk native VLAN: none Administrative private-vlan trunk encapsulation: dot1q Administrative private-vlan trunk normal VLANs: none Administrative private-vlan trunk private VLANs: none Operational private-vlan: none switch#</pre> <p>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 44</p>	<p><b>Example</b></p> <ul style="list-style-type: none"> <li>These commands create the trunk mode allowed VLAN list of 6-10 for Ethernet interface 14, then verifies the VLAN list.</li> </ul> <pre>switch(config)#interface ethernet 14 switch(config-if-Et14)#switchport trunk allowed vlan 6-10 switch(config-if-Et14)#show interfaces ethernet 14 switchport Name: Et14 Switchport: Enabled Administrative Mode: trunk Operational Mode: trunk Access Mode VLAN: 1 (inactive) Trunking Native Mode VLAN: 1 (inactive) Administrative Native VLAN tagging: disabled Trunking VLANs Enabled: 6-10 Trunk Groups:  switch(config-if-Et14)#</pre> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 665.  Arista User Manual v. 4.13.6F (4/14/2014), at 773.  Arista User Manual v. 4.13.7M (6/17/2014), at 791.  Arista User Manual v. 4.14.3F (Rev. 2) (10/2/2014), at 798.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 800.  Arista User Manual v. 4.14.6M (1/19/2015), at 796.  Arista User Manual v. 4.15.0F (4/18/2015), at 804.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 796.</p>

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<p>Cisco NX-OS 6.2</p> <p>Effective date of registration: 11/13/2014</p>	<p><b>Examples</b></p> <p>This example shows how to display information about the specified VLAN. This command displays statistical information gathered on the VLAN at 1-minute intervals:</p> <pre>switch# show interface vlan 5 Vlan5 is administratively down, line protocol is down Hardware is EtherSVI, address is 0000.0000.0000 MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation ARPA, loopback not set Keepalive not supported ARP type: ARPA Last clearing of "show interface" counters 01:21:55 1 minute input rate 0 bytes/sec, 0 packets/sec 1 minute output rate 0 bytes/sec, 0 packets/sec L3 Switched: input: 0 pkts, 0 bytes - output: 0 pkts, 0 bytes L3 in Switched: ucast: 0 pkts, 0 bytes - mcast: 0 pkts, 0 bytes L3 out Switched: ucast: 0 pkts, 0 bytes - mcast: 0 pkts, 0 bytes</pre> <p>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 44</p>	<p><b>Example</b></p> <ul style="list-style-type: none"> <li>This command display configuration and status information for Ethernet interface 1 and 2.</li> </ul> <pre>switch&gt;show interfaces ethernet 1-2 Ethernet1 is up, line protocol is up (connected) Hardware is Ethernet, address is 001c.2481.7647 (bia 001c.2481.7647) Description: mkt.1 MTU 9212 bytes, BW 10000000 Kbit Full-duplex 10Gb/s auto negotiation: off Last clearing of "show interface" counters never 5 seconds input rate 83.5 Mbps (0.3% with framing), 846 packets/sec 5 seconds output rate 180 kbps (0.0% with framing), 55 packets/sec 76437268 packets input, 94280286608 bytes Received 2208 broadcasts, 73358 multicast 0 runs, 0 giants 0 input errors, 0 CRC, 0 alignment, 0 symbol 0 PAUSE input 6184281 packets output, 4071319140 bytes Sent 2209 broadcasts, 345754 multicast 0 output errors, 0 collisions 0 late collision, 0 deferred 0 PAUSE output</pre> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 567.  Arista User Manual v. 4.13.6F (4/14/2014), at 672.  Arista User Manual v. 4.13.7M (6/17/2014), at 673.  Arista User Manual v. 4.14.3F (Rev. 2) (10/2/2014), at 681.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 683.  Arista User Manual v. 4.14.6M (1/19/2015), at 679.  Arista User Manual v. 4.15.0F (4/18/2015), at 687.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 679.</p>



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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<div>Examples</div> <div>This example shows how to display STP when you are running Rapid PVST+:</div> <div>switch# show spanning-tree</div> <div>VLAN0001</div> <div>Spanning tree enabled protocol rstp</div> <div>Root ID      Priority      32769</div> <div>             Address      000d.eca3.9f01</div> <div>Cost                4</div> <div>Port                4105 (port-channel10)</div> <div>Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec</div> <div>Bridge ID    Priority      32769 (priority 32768 sys-id-ext 1)</div> <div>             Address      0022.5579.7641</div> <div>             Hello Time    2 sec    Max Age 20 sec    Forward Delay 15 sec</div> <div>Interface      Role    Sts    Cost      Prio.Nbr    Type</div> <div>Po10            Root   FWD    2        128.4105    (vPC peer-link) P2p</div> <div>Po20            Desg   FWD    1        128.4115    (vPC) P2p</div> <div>Po30            Root   FWD    1        128.4125    (vPC) P2p</div> <div>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 63</div>	<div>Show commands (such as show spanning-tree) displays the RSTP instance as MST0 (MST instance 0).</div> <div>Example</div> <div>• This command, while the switch is in RST mode, displays RST instance information.</div> <div>switch(config)#show spanning-tree</div> <div>MST0</div> <div>Spanning tree enabled protocol rstp</div> <div>Root ID      Priority      32768</div> <div>             Address      001c.730c.1867</div> <div>             This bridge is the root</div> <div>&lt;---RSTP mode indicator</div> <div>Bridge ID    Priority      32768 (priority 32768 sys-id-ext 0)</div> <div>             Address      001c.730c.1867</div> <div>             Hello Time    2.000 sec    Max Age 20 sec    Forward Delay 15 sec</div> <div>Interface      Role      State      Cost      Prio.Nbr    Type</div> <div>Et51            designated forwarding 2000      128.51      P2p</div> <div>switch(config)#</div> <div>Arista User Manual v. 4.12.4 (9/16/2013), at 860. Arista User Manual v. 4.13.6F (4/14/2014), at 924. Arista User Manual v. 4.13.7M (6/17/2014), at 942. Arista User Manual v. 4.14.3F (Rev. 2) (10/2/2014), at 960. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 962. Arista User Manual v. 4.14.6M (1/19/2015), at 958. Arista User Manual v. 4.15.0F (4/18/2015), at 966. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 958.</div>

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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<p>This example shows how to display STP information when you are running MST:</p> <pre>switch# show spanning-tree</pre> <pre>MST0000 Spanning tree enabled protocol mstp Root ID    Priority    32768 Address    0018.bad8.fc150 Cost       0 Port       258 (Ethernet 2/2) Hello Time 2 sec  Max Age 20 sec  Forward Delay 15 sec</pre> <pre>Bridge ID  Priority    32768 (priority 32768 sys-id-ext 0) Address    0018.bad8.239d Hello Time 2 sec  Max Age 20 sec  Forward Delay 15 sec</pre> <table><thead><tr><th>Interface</th><th>Role</th><th>Sts</th><th>Cost</th><th>Prio.Nbr</th><th>Type</th></tr></thead><tbody><tr><td>Eth2/1</td><td>Ath</td><td>BRN</td><td>20000</td><td>128.257</td><td>Network, P2p BA_1nc.</td></tr><tr><td>Eth2/2</td><td>Root</td><td>FWD</td><td>20000</td><td>128.258</td><td>Edge, P2p</td></tr><tr><td>Eth3/48</td><td>Desg</td><td>FWD</td><td>20000</td><td>128.43228</td><td>P2p</td></tr></tbody></table> <p>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 63</p>	Interface	Role	Sts	Cost	Prio.Nbr	Type	Eth2/1	Ath	BRN	20000	128.257	Network, P2p BA_1nc.	Eth2/2	Root	FWD	20000	128.258	Edge, P2p	Eth3/48	Desg	FWD	20000	128.43228	P2p	<p>This command displays output from the show spanning-tree command:</p> <pre>Switch#show spanning-tree</pre> <pre>MST0 Spanning tree enabled protocol mstp Root ID    Priority    32768 Address    0011.2201.0301 This bridge is the root</pre> <table><thead><tr><th>Bridge ID</th><th>Priority</th><th>32768 (priority 32768 sys-id-ext 0)</th></tr><tr><td>Address</td><td>0011.2201.0301</td><td></td></tr><tr><td>Hello Time</td><td>2 sec</td><td>Max Age 20 sec Forward Delay 15 sec</td></tr></thead></table> <table><thead><tr><th>Interface</th><th>Role</th><th>State</th><th>Cost</th><th>Prio.Nbr</th><th>Type</th></tr></thead><tbody><tr><td>Et4</td><td>designated forwarding</td><td>2000</td><td>128.4</td><td>P2p</td><td></td></tr><tr><td>Et5</td><td>designated forwarding</td><td>2000</td><td>128.5</td><td>P2p</td><td></td></tr><tr><td>...</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>PEt4</td><td>designated forwarding</td><td>2000</td><td>128.31</td><td>P2p</td><td></td></tr><tr><td>PEt5</td><td>designated forwarding</td><td>2000</td><td>128.44</td><td>P2p</td><td></td></tr><tr><td>...</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Po3</td><td>designated forwarding</td><td>1999</td><td>128.1003</td><td>P2p</td><td></td></tr></tbody></table> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 883. Arista User Manual v. 4.13.6F (4/14/2014), at 947. Arista User Manual v. 4.13.7M (6/17/2014), at 965. Arista User Manual v. 4.14.3F (Rev. 2) (10/2/2014), at 983. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 985. Arista User Manual v. 4.14.6M (1/19/2015), at 981. Arista User Manual v. 4.15.0F (4/18/2015), at 989. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 981.</p>	Bridge ID	Priority	32768 (priority 32768 sys-id-ext 0)	Address	0011.2201.0301		Hello Time	2 sec	Max Age 20 sec Forward Delay 15 sec	Interface	Role	State	Cost	Prio.Nbr	Type	Et4	designated forwarding	2000	128.4	P2p		Et5	designated forwarding	2000	128.5	P2p		...						PEt4	designated forwarding	2000	128.31	P2p		PEt5	designated forwarding	2000	128.44	P2p		...						Po3	designated forwarding	1999	128.1003	P2p	
	Interface	Role	Sts	Cost	Prio.Nbr	Type																																																																													
	Eth2/1	Ath	BRN	20000	128.257	Network, P2p BA_1nc.																																																																													
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Et4	designated forwarding	2000	128.4	P2p																																																																															
Et5	designated forwarding	2000	128.5	P2p																																																																															
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Po3	designated forwarding	1999	128.1003	P2p																																																																															

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<p>Cisco NX-OS 6.2</p> <p>Effective date of registration: 11/13/2014</p>	<pre> Spanning tree enabled protocol rstp Root ID    Priority    32768           Address    000d.eca3.9f01           Cost       4           Port       4105 (port-channel10)           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec  Bridge ID   Priority    32770 (priority 32768 sys-id-ext 2)           Address    0022.5579.7641           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec  Interface   Role Sts Cost      Prio.Nbr Type ----- Po10        Root FWD 2        128.4105 (vPC peer-link) P2p Po20        Desg FWD 1        128.4115 (vPC) P2p Po30        Root FWD 1        128.4125 (vPC) P2p </pre> <p>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 73</p>	<pre> Spanning tree enabled protocol rstp Root ID    Priority    32768           Address    001c.7301.07b9           Cost       1999 (Ext) 0 (Int)           Port       101 (Port-Channel2)           Hello Time 2.000 sec Max Age 20 sec Forward Delay 15 sec  Bridge ID   Priority    32768 (priority 32768 sys-id-ext 0)           Address    001c.7304.195b           Hello Time 2.000 sec Max Age 20 sec Forward Delay 15 sec  Interface   Role      State      Cost      Prio.Nbr Type ----- Et4          designated forwarding 20000      128.4      P2p Et5          designated forwarding 20000      128.5      P2p Et6          designated forwarding 20000      128.6      P2p Et23         designated forwarding 20000      128.23     P2p Et26         designated forwarding 20000      128.26     P2p Et32         designated forwarding 2000      128.32     P2p </pre> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 883.  Arista User Manual v. 4.13.6F (4/14/2014), at 947.  Arista User Manual v. 4.13.7M (6/17/2014), at 965.  Arista User Manual v. 4.14.3F (Rev. 2) (10/2/2014), at 983.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 985.  Arista User Manual v. 4.14.6M (1/19/2015), at 981.  Arista User Manual v. 4.15.0F (4/18/2015), at 989.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 981.</p>

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<p>Cisco NX-OS 6.2</p> <p>Effective date of registration: 11/13/2014</p>	<p>This example shows how to display detailed information about the STP configuration:</p> <pre>switch(config)# show spanning-tree detail</pre> <p>VLAN0001 is executing the rstp compatible Spanning Tree protocol</p> <p>Bridge Identifier has priority 32768, sysid 1, address 0022.5579.7641</p> <p>Configured hello time 2, max age 20, forward delay 15</p> <p>Current root has priority 32769, address 000d.eca3.9f01</p> <p>Root port is 4105 (port-channel10), cost of root path is 4</p> <p>Topology change flag not set, detected flag not set</p> <p>Number of topology changes 1 last change occurred 20:24:36 ago</p> <p>from port-channel10</p> <p>Times: hold 1, topology change 35, notification 2</p> <p>hello 2, max age 20, forward delay 15</p> <p>Timers: hello 0, topology change 0, notification 0</p> <p>Port 4105 (port-channel10, VPC Peer-link) of VLAN0001 is root forwarding</p> <p>Port path cost 2, Port priority 128, Port Identifier 128.4105</p> <p>Designated root has priority 32769, address 000d.eca3.9f01</p> <p>Designated bridge has priority 32769, address 0022.5579.7341</p> <p>Designated port id is 128.4105, designated path cost 2</p> <p>Timers: message age 16, forward delay 0, hold 0</p> <p>Number of transitions to forwarding state: 1</p> <p>Link type is point-to-point by default</p> <p>BPDU: sent 36729, received 36739</p> <p>Port 4115 (port-channel20, VPC) of VLAN0001 is designated forwarding</p> <p>Port path cost 1, Port priority 128, Port Identifier 128.4115</p> <p>Designated root has priority 32769, address 000d.eca3.9f01</p> <p>Designated bridge has priority 32769, address 0022.5579.7341</p> <p>Designated port id is 128.4115, designated path cost 2</p> <p>Timers: message age 0, forward delay 0, hold 0</p> <p>Number of transitions to forwarding state: 0</p> <p>Link type is point-to-point by default</p> <p>BPDU: sent 0, received 0</p> <p>Port 4125 (port-channel30, VPC) of VLAN0001 is root forwarding</p> <p>Port path cost 1, Port priority 128, Port Identifier 128.4125</p> <p>Designated root has priority 32769, address 000d.eca3.9f01</p> <p>Designated bridge has priority 32769, address 000d.eca3.9f01</p> <p>Designated port id is 128.4125, designated path cost 0</p> <p>Timers: message age 0, forward delay 0, hold 0</p> <p>Number of transitions to forwarding state: 0</p> <p>Link type is point-to-point by default</p> <p>BPDU: sent 0, received 0</p> <p>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 73</p>	<ul style="list-style-type: none"> <li>This command displays STP data, including an information block for each interface running STP.</li> </ul> <pre>switch&gt;show spanning-tree vlan 1000 detail</pre> <p>MST0 is executing the rstp Spanning Tree protocol</p> <p>Bridge Identifier has priority 32768, sysid 0, address 001c.7304.195b</p> <p>Configured hello time 2.000, max age 20, forward delay 15, transmit hold-count 6</p> <p>Current root has priority 32768, address 001c.7301.07b9</p> <p>Root port is 101 (Port-Channel2), cost of root path is 1999 (Ext) 0 (Int)</p> <p>Number of topology changes 4109 last change occurred 1292651 seconds ago</p> <p>from Ethernet13</p> <p>Port 4 (Ethernet4) of MST0 is designated forwarding</p> <p>Port path cost 20000, Port priority 128, Port Identifier 128.4.</p> <p>Designated root has priority 32768, address 001c.7301.07b9</p> <p>Designated bridge has priority 32768, address 001c.7304.195b</p> <p>Designated port id is 128.4, designated path cost 1999 (Ext) 0 (Int)</p> <p>Timers: message age 1, forward delay 15, hold 20</p> <p>Number of transitions to forwarding state: 1</p> <p>Link type is point-to-point by default, Internal</p> <p>BPDU: sent 452252, received 0, taggedErr 0, otherErr 0, rateLimiterCount 0</p> <p>Rate-Limiter: enabled, Window: 10 sec, Max-BPDU: 400</p> <p>Port 5 (Ethernet5) of MST0 is designated forwarding</p> <p>Port path cost 20000, Port priority 128, Port Identifier 128.5.</p> <p>Designated root has priority 32768, address 001c.7301.07b9</p> <p>Designated bridge has priority 32768, address 001c.7304.195b</p> <p>Designated port id is 128.5, designated path cost 1999 (Ext) 0 (Int)</p> <p>Timers: message age 1, forward delay 15, hold 20</p> <p>Number of transitions to forwarding state: 1</p> <p>Link type is point-to-point by default, Internal</p> <p>BPDU: sent 1006266, received 0, taggedErr 0, otherErr 0, rateLimiterCount 0</p> <p>Rate-Limiter: enabled, Window: 10 sec, Max-BPDU: 400</p> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 884.</p> <p>Arista User Manual v. 4.13.6F (4/14/2014), at 948.</p> <p>Arista User Manual v. 4.13.7M (6/17/2014), at 966.</p> <p>Arista User Manual v. 4.14.3F (Rev. 2) (10/2/2014), at 984.</p> <p>Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 986.</p> <p>Arista User Manual v. 4.14.6M (1/19/2015), at 982.</p> <p>Arista User Manual v. 4.15.0F (4/18/2015), at 990.</p> <p>Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 982.</p>

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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<p>This example shows how to display STP information about a specified interface when you are running Rapid PVST+:</p> <pre>switch(config)# show spanning-tree interface ethernet 8/2</pre> <table><thead><tr><th>Vlan</th><th>Role</th><th>Sts</th><th>Cost</th><th>Prio.Nbr</th><th>Type</th></tr></thead><tbody><tr><td>VLAN0001</td><td>Altn</td><td>BLK</td><td>20000</td><td>128.1025</td><td>P2p</td></tr><tr><td>VLAN0002</td><td>Desg</td><td>FWD</td><td>20000</td><td>128.1025</td><td>P2p</td></tr></tbody></table> <p>This example shows how to display STP information about a specified interface when you are running MST:</p> <pre>switch(config)# show spanning-tree interface ethernet 2/50</pre> <table><thead><tr><th>Mst</th><th>Instance</th><th>Role</th><th>Sts</th><th>Cost</th><th>Prio.Nbr</th><th>Type</th></tr></thead><tbody><tr><td>MST0000</td><td></td><td>Desg</td><td>FWD</td><td>20000</td><td>128.1281</td><td>P2p</td></tr></tbody></table> <p>This example shows how to display detailed STP information about a specified interface when you are running Rapid PVST+:</p> <pre>switch(config)# show spanning-tree interface ethernet 8/1 detail</pre> <p>Port 1025 (Ethernet8/1) of VLAN0001 is alternate blocking Port path cost 20000, Port priority 128, Port Identifier 128.1025 Designated root has priority 28672, address 0018.bad8.239d Designated bridge has priority 28672, address 0018.bad8.239d Designated port id is 128.1281, designated path cost 0 Timers: message age 15, forward delay 0, hold 0 Number of transitions to forwarding state: 1 Link type is point-to-point by default The port type is network by default. BPDU: sent 4657, received 188</p> <p>Port 1025 (Ethernet8/1) of VLAN0002 is designated forwarding Port path cost 20000, Port priority 128, Port Identifier 128.1025 Designated root has priority 32770, address 0018.bad7.fc15 Designated bridge has priority 32770, address 0018.bad7.fc15 Designated port id is 128.1025, designated path cost 0 Timers: message age 0, forward delay 0, hold 0 Number of transitions to forwarding state: 1 Link type is point-to-point by default The port type is network by default. BPDU: sent 4838, received 0</p>	Vlan	Role	Sts	Cost	Prio.Nbr	Type	VLAN0001	Altn	BLK	20000	128.1025	P2p	VLAN0002	Desg	FWD	20000	128.1025	P2p	Mst	Instance	Role	Sts	Cost	Prio.Nbr	Type	MST0000		Desg	FWD	20000	128.1281	P2p	<p>Examples</p> <ul style="list-style-type: none"><li>This command displays an STP table for Ethernet 5 interface.</li></ul> <pre>switch#show spanning-tree interface ethernet 5</pre> <table><thead><tr><th>Instance</th><th>Role</th><th>State</th><th>Cost</th><th>Prio.Nbr</th><th>Type</th></tr></thead><tbody><tr><td>MST0</td><td>designated</td><td>forwarding</td><td>20000</td><td>128.5</td><td>P2p</td></tr></tbody></table> <pre>switch&gt;</pre> <ul style="list-style-type: none"><li>This command displays a data block for Ethernet interface 5.</li></ul> <pre>switch#show spanning-tree interface ethernet 5 detail</pre> <p>Port 5 (Ethernet5) of MST0 is designated forwarding Port path cost 20000, Port priority 128, Port Identifier 128.5. Designated root has priority 32768, address 001c.7301.07b9 Designated bridge has priority 32768, address 001c.7304.195b Designated port id is 128.5, designated path cost 1999 (Ext) 0 (Int) Timers: message age 1, forward delay 15, hold 20 Number of transitions to forwarding state: 1 Link type is point-to-point by default, Internal BPDU: sent 1008766, received 0, taggedErr 0, otherErr 0, rateLimiterCount 0 Rate-Limiter: enabled, Window: 10 sec, Max-BPDU: 400<pre>switch&gt;</pre><p>Arista User Manual v. 4.12.4 (9/16/2013), at 888. Arista User Manual v. 4.13.6F (4/14/2014), at 952. Arista User Manual v. 4.13.7M (6/17/2014), at 970. Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 988. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 990. Arista User Manual v. 4.14.6M (1/19/2015), at 986. Arista User Manual v. 4.15.0F (4/18/2015), at 994. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 986.</p></p>	Instance	Role	State	Cost	Prio.Nbr	Type	MST0	designated	forwarding	20000	128.5	P2p
	Vlan	Role	Sts	Cost	Prio.Nbr	Type																																								
VLAN0001	Altn	BLK	20000	128.1025	P2p																																									
VLAN0002	Desg	FWD	20000	128.1025	P2p																																									
Mst	Instance	Role	Sts	Cost	Prio.Nbr	Type																																								
MST0000		Desg	FWD	20000	128.1281	P2p																																								
Instance	Role	State	Cost	Prio.Nbr	Type																																									
MST0	designated	forwarding	20000	128.5	P2p																																									
Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 77.																																														



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## Cisco

```
switch# show spanning-tree mst

##### MST0    vlans mapped: 1-4094
Bridge        address 0018.bad7.fc15 priority 32768 (32768 sysid 0)
Root          this switch for the CIST
Regional Root this switch
Operational   hello time 2 , forward delay 15, max age 20, txholdcount 6
Configured    hello time 2 , forward delay 15, max age 20, max hops 20

Interface      Role Sts Cost      Prio.Nbr Type
-----
Eth8/1         Desg FWD 20000 128.1025 P2p
Eth8/2         Desg FWD 20000 128.1026 P2p

This example shows how to display STP information about a specific MST instance:

switch# show spanning-tree mst 0

##### MST0    vlans mapped: 1-4094
Bridge        address 0018.bad7.fc15 priority 32768 (32768 sysid 0)
Root          this switch for the CIST
Regional Root this switch
Operational   hello time 2 , forward delay 15, max age 20, txholdcount 6
Configured    hello time 2 , forward delay 15, max age 20, max hops 20

Interface      Role Sts Cost      Prio.Nbr Type
-----
Eth8/1         Desg FWD 20000 128.1025 P2p
Eth8/2         Desg FWD 20000 128.1026 P2p

This example shows how to display detailed STP information about the MST protocol:

switch# show spanning-tree mst detail

##### MST0    vlans mapped: 1-4094
Bridge        address 0018.bad7.fc15 priority 32768 (32768 sysid 0)
Root          this switch for the CIST
Regional Root this switch
Operational   hello time 2 , forward delay 15, max age 20, txholdcount 6
Configured    hello time 2 , forward delay 15, max age 20, max hops 20

Eth8/1 of MST0 is designated forwarding
Port info     port id 128.1025 priority 128 cost 20000
Designated root address 0018.bad7.fc15 priority 32768 cost 0
Design. regional root address 0018.bad7.fc15 priority 32768 cost 0
Designated bridge address 0018.bad7.fc15 priority 32768 port id 128.1025
Timers: message expires in 0 sec, forward delay 0, forward transitions 1
Bpdus sent 1379, received 3

Eth8/2 of MST0 is designated forwarding
Port info     port id 128.1026 priority 128 cost 20000
Designated root address 0018.bad7.fc15 priority 32768 cost 0
Design. regional root address 0018.bad7.fc15 priority 32768 cost 0
Designated bridge address 0018.bad7.fc15 priority 32768 port id 128.1026
Timers: message expires in 0 sec, forward delay 0, forward transitions 1
Bpdus sent 1380, received 2
```

Cisco NX-OS 6.2

Effective date of  
registration:  
11/13/2014Cisco Nexus 7000 Series NX-OS Interfaces Command Reference  
(August 2013), at 80.

## Arista

## Examples

- This command displays interface data blocks for MST instance 3.

```
switch# show spanning-tree mst 3 detail

##### MST3    vlans mapped: 3
Bridge        address 0011.2233.4402 priority 32771 (32768 sysid 3)
Root          address 0011.2233.4401 priority 32771 (32768 sysid 3)

Ethernet1 of MST3 is root forwarding
Port info     port id 128.1 priority 128 cost 2000
Designated root address 0011.2233.4401 priority 32768 cost 0
Designated bridge address 0011.2233.4401 priority 32768 port id 128.1

Ethernet2 of MST3 is alternate discarding
Port info     port id 128.2 priority 128 cost 2000
Designated root address 0011.2233.4401 priority 32768 cost 0
Designated bridge address 0011.2233.4401 priority 32768 port id 128.2

Ethernet3 of MST3 is designated forwarding
Port info     port id 128.3 priority 128 cost 2000
Designated root address 0011.2233.4401 priority 32768 cost 2000
Designated bridge address 0011.2233.4402 priority 32768 port id 128.3
```

- This command displays interface table blocks for all MST instances.

```
switch# show spanning-tree mst

##### MST0    vlans mapped: 1,4-4094
Bridge        address 0011.2233.4402 priority 32768 (32768 sysid 0)
Root          address 0011.2233.4401 priority 32768 (32768 sysid 0)
Regional Root address 0011.2233.4401 priority 32768 (32768 sysid 0)

Interface      Role      State      Cost      Prio.Nbr Type
-----
Rt1            root      forwarding 2000      128.1    P2p
Rt2            alternate discarding 2000      128.2    P2p
Rt3            designated forwarding 2000      128.3    P2p
Rt4            designated forwarding 2000      128.4    P2p

##### MST2 vlans mapped: 2
Bridge        address 0011.2233.4402 priority 8194 (8192 sysid 2)
Root          this switch for MST2

Interface      Role      State      Cost      Prio.Nbr Type
-----
Rt1            designated forwarding 2000      128.1    P2p
Rt2            designated forwarding 2000      128.2    P2p
Rt3            designated forwarding 2000      128.3    P2p
Rt4            designated forwarding 2000      128.4    P2p

##### MST3 vlans mapped: 3
Bridge        address 0011.2233.4402 priority 32771 (32768 sysid 3)
Root          address 0011.2233.4401 priority 32771 (32768 sysid 3)

Interface      Role      State      Cost      Prio.Nbr Type
-----
Rt1            root      forwarding 2000      128.1    P2p
Rt2            alternate discarding 2000      128.2    P2p
Rt3            designated forwarding 2000      128.3    P2p
Rt4            designated forwarding 2000      128.4    P2p
```

Arista User Manual v. 4.12.4 (9/16/2013), at 889-890.  
Arista User Manual v. 4.13.6F (4/14/2014), at 953-954.  
Arista User Manual v. 4.13.7M (6/17/2014), at 971-972.  
Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 990.  
Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 991-992.  
Arista User Manual v. 4.14.6M (1/19/2015), at 987-988.  
Arista User Manual v. 4.15.0F (4/18/2015), at 995-996.  
Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 987-988.

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<p>Cisco NX-OS 6.2</p> <p>Effective date of registration: 11/13/2014</p>	<p>This example shows how to display information about the MST configuration:</p> <pre>switch)# show spanning-tree mst configuration</pre> <pre>Name: [mst-bldg-sj6/3] Revision: 1 Instances Configured: 3 Instance Vlans mapped ----- 0 1 2000 2-2000 4094 2001-4094 -----</pre> <p>This example shows how to display the MD5 digest included in the current MST configuration:</p> <pre>switch)# show spanning-tree mst configuration digest</pre> <pre>Name [mst-config] Revision 10 Instances configured 25 Digest 0x40D5ECA178C657835C83BBBCB16723192 Pre-std Digest 0x27BF112A75B72781ED928D9RC5BB4251</pre> <p>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 81.</p>	<p>Examples</p> <ul style="list-style-type: none"> <li>This command displays the MST region's VLAN-to-instance map.</li> </ul> <pre>switch&gt;show spanning-tree mst configuration</pre> <pre>Name [] Revision 0 Instances configured 3 Instance Vlans mapped ----- 0 1,4-4094 2 2 3 3 ----- switch&gt;</pre> <ul style="list-style-type: none"> <li>This command displays the MST region's configuration digest.</li> </ul> <pre>switch&gt;show spanning-tree mst configuration digest</pre> <pre>Name [] Revision 0 Instances configured 1 Digest 0xAC36177F50283CD4B83821D8AB26DE62 switch&gt;</pre> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 891. Arista User Manual v. 4.13.6F (4/14/2014), at 955. Arista User Manual v. 4.13.7M (6/17/2014), at 973. Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 991. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 993. Arista User Manual v. 4.14.6M (1/19/2015), at 989. Arista User Manual v. 4.15.0F (4/18/2015), at 997. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 989.</p>

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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<div>Examples</div> <div>This example shows how to display information for the root bridge:</div> <div>switch(config)# show spanning-tree root</div> <div><table><thead><tr><th>MST Instance</th><th>Root ID</th><th>Cost</th><th>Time</th><th>Age</th><th>Dly</th><th>Root Port</th></tr></thead><tbody><tr><td>MST0000</td><td>32768 0018.bad7.fc15</td><td>0</td><td>2</td><td>20</td><td>15</td><td>This bridge is root</td></tr></tbody></table></div> <div>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 82-83.</div>	MST Instance	Root ID	Cost	Time	Age	Dly	Root Port	MST0000	32768 0018.bad7.fc15	0	2	20	15	This bridge is root	<div>Examples</div> <div><ul style="list-style-type: none"><li>This command displays a table of root bridge information.</li></ul></div> <div>switch&gt;show spanning-tree root</div> <div><table><thead><tr><th>Instance</th><th>Priority</th><th>MAC addr</th><th>Root Cost</th><th>Hello Time</th><th>Max Age</th><th>Fwd Dly</th><th>Root Port</th></tr></thead><tbody><tr><td>MST0</td><td>32768</td><td>001c.7301.23de</td><td>0</td><td>2</td><td>20</td><td>15</td><td>Po937</td></tr><tr><td>MST101</td><td>32869</td><td>001c.7301.23de</td><td>3998</td><td>0</td><td>0</td><td>0</td><td>Po909</td></tr><tr><td>MST102</td><td>32870</td><td>001c.7301.23de</td><td>3998</td><td>0</td><td>0</td><td>0</td><td>Po911</td></tr></tbody></table></div> <div>switch&gt;</div> <div>Arista User Manual v. 4.12.4 (9/16/2013), at 894. Arista User Manual v. 4.13.6F (4/14/2014), at 958. Arista User Manual v. 4.13.7M (6/17/2014), at 976. Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 994. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 996. Arista User Manual v. 4.14.6M (1/19/2015), at 992. Arista User Manual v. 4.15.0F (4/18/2015), at 1000. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 992.</div>	Instance	Priority	MAC addr	Root Cost	Hello Time	Max Age	Fwd Dly	Root Port	MST0	32768	001c.7301.23de	0	2	20	15	Po937	MST101	32869	001c.7301.23de	3998	0	0	0	Po909	MST102	32870	001c.7301.23de	3998	0	0	0	Po911
	MST Instance	Root ID	Cost	Time	Age	Dly	Root Port																																									
MST0000	32768 0018.bad7.fc15	0	2	20	15	This bridge is root																																										
Instance	Priority	MAC addr	Root Cost	Hello Time	Max Age	Fwd Dly	Root Port																																									
MST0	32768	001c.7301.23de	0	2	20	15	Po937																																									
MST101	32869	001c.7301.23de	3998	0	0	0	Po909																																									
MST102	32870	001c.7301.23de	3998	0	0	0	Po911																																									
Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<div>This example shows how to display information about the number of VLANs configured on the device:</div> <div>switch# show vlan summary</div> <div><table><tbody><tr><td>Number of existing VLANs</td><td>: 9</td></tr><tr><td>Number of existing user VLANs</td><td>: 9</td></tr><tr><td>Number of existing extended VLANs</td><td>: 0</td></tr></tbody></table></div> <div>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 94.</div>	Number of existing VLANs	: 9	Number of existing user VLANs	: 9	Number of existing extended VLANs	: 0	<div>Example</div> <div><ul style="list-style-type: none"><li>This command displays the number of VLANs on the switch.</li></ul></div> <div>switch&gt;show vlan summary</div> <div><table><tbody><tr><td>Number of existing VLANs</td><td>: 18</td></tr></tbody></table></div> <div>switch&gt;</div> <div>Arista User Manual v. 4.12.4 (9/16/2013), at 658. Arista User Manual v. 4.13.6F (4/14/2014), at 766. Arista User Manual v. 4.13.7M (6/17/2014), at 784. Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 791. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 793. Arista User Manual v. 4.14.6M (1/19/2015), at 789. Arista User Manual v. 4.15.0F (4/18/2015), at 797. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 789.</div>	Number of existing VLANs	: 18																																						
	Number of existing VLANs	: 9																																														
Number of existing user VLANs	: 9																																															
Number of existing extended VLANs	: 0																																															
Number of existing VLANs	: 18																																															



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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<div>Examples</div> <div>This example shows how to display information about all private VLANs on the device:</div> <div><div>switch(config)# show vlan private-vlan</div><table><thead><tr><th>Primary</th><th>Secondary</th><th>Type</th><th>Ports</th></tr></thead><tbody><tr><td>200</td><td>201</td><td>isolated</td><td>Eth2/26, Eth2/27</td></tr><tr><td>200</td><td>202</td><td>community</td><td>Eth2/26, Eth2/28</td></tr></tbody></table></div> <div>Cisco Nexus 7000 Series NX-OS Interfaces Command Reference (August 2013), at 100.</div>	Primary	Secondary	Type	Ports	200	201	isolated	Eth2/26, Eth2/27	200	202	community	Eth2/26, Eth2/28	<div>Example</div> <div><ul style="list-style-type: none"><li>This command displays the private VLANs.</li></ul></div> <div><div>switch&gt;show vlan private-vlan</div><table><thead><tr><th>Primary</th><th>Secondary</th><th>Type</th><th>Ports</th></tr></thead><tbody><tr><td>5</td><td>25</td><td>isolated</td><td></td></tr><tr><td>5</td><td>26</td><td>isolated</td><td></td></tr><tr><td>7</td><td>31</td><td>community</td><td></td></tr><tr><td>7</td><td>32</td><td>isolated</td><td></td></tr></tbody></table><div>switch&gt;</div></div> <div>Arista User Manual v. 4.12.4 (9/16/2013), at 657. Arista User Manual v. 4.13.6F (4/14/2014), at 765. Arista User Manual v. 4.13.7M (6/17/2014), at 783. Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 790. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 792. Arista User Manual v. 4.14.6M (1/19/2015), at 788. Arista User Manual v. 4.15.0F (4/18/2015), at 796. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 788.</div>	Primary	Secondary	Type	Ports	5	25	isolated		5	26	isolated		7	31	community		7	32	isolated	
	Primary	Secondary	Type	Ports																														
200	201	isolated	Eth2/26, Eth2/27																															
200	202	community	Eth2/26, Eth2/28																															
Primary	Secondary	Type	Ports																															
5	25	isolated																																
5	26	isolated																																
7	31	community																																
7	32	isolated																																

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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<p>BGP table version is 10, local router ID is 3.3.3.3 Status: s-suppressed, x-deleted, S-stale, d-dampened, h-history, *-valid, &gt;-best Path type: i-internal, e-external, c-confed, l-local, a-aggregate, r-redist Origin codes: i - IGP, e - EGP, ? - incomplete   - multipath</p> <table><tr><th>Network</th><th>Next Hop</th><th>Metric</th><th>LocPrf</th><th>Weight</th><th>Path</th></tr><tr><td>* i200.0.1.100/32</td><td>201.0.25.1</td><td></td><td>100</td><td>100</td><td>6553601 i</td></tr><tr><td>*&gt;e</td><td>201.0.13.1</td><td></td><td></td><td>0</td><td>6553601 i</td></tr><tr><td>* i200.0.2.100/32</td><td>201.0.25.1</td><td></td><td>100</td><td>100</td><td>6553601 i</td></tr><tr><td>*&gt;e</td><td>201.0.13.1</td><td></td><td></td><td>0</td><td>6553601 i</td></tr><tr><td>*&gt;i200.0.3.100/32</td><td>0.0.0.0</td><td></td><td>100</td><td>32768</td><td>i</td></tr></table> <p>Cisco Nexus 7000 Series NX-OS Unicast Routing Command Reference (August 2013), at 401.</p>	Network	Next Hop	Metric	LocPrf	Weight	Path	* i200.0.1.100/32	201.0.25.1		100	100	6553601 i	*>e	201.0.13.1			0	6553601 i	* i200.0.2.100/32	201.0.25.1		100	100	6553601 i	*>e	201.0.13.1			0	6553601 i	*>i200.0.3.100/32	0.0.0.0		100	32768	i	<p>switch&gt;show ip bgp neighbors 10.14.4.4 advertised-routes regexp _64502_ BGP routing table information for VRF default Router identifier 172.24.78.191, local AS number 64498 Route status codes: s - suppressed, * - valid, &gt; - active, E - ECMP head, e - ECMP S - Stale Origin codes: i - IGP, e - EGP, ? - incomplete AS Path Attributes: Or-ID - Originator ID, C-LST - Cluster List, LL Nexthop - Link Local Nexthop</p> <table><tr><th>Network</th><th>Next Hop</th><th>Metric</th><th>LocPref</th><th>Weight</th><th>Path</th></tr><tr><td>* &gt; 10.99.31.0/24</td><td>10.88.202.1</td><td>333</td><td>100</td><td>-</td><td>(64502 64503) 99 i</td></tr><tr><td>* &gt; 10.99.41.0/24</td><td>10.88.202.1</td><td>333</td><td>100</td><td>-</td><td>(64502 64503) 99 i</td></tr><tr><td>* &gt; 10.99.99.0/24</td><td>10.88.202.1</td><td>333</td><td>100</td><td>-</td><td>(64502 64504) 99 i</td></tr></table> <p>Arista User Manual v. 4.13.6F (4/14/2014), at 1587. Arista User Manual v. 4.13.7M (6/17/2014), at 1605. Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 1637. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1651. Arista User Manual v. 4.14.6M (1/19/2015), at 1647. Arista User Manual v. 4.15.0F (4/18/2015), at 1655. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1649.</p>	Network	Next Hop	Metric	LocPref	Weight	Path	* > 10.99.31.0/24	10.88.202.1	333	100	-	(64502 64503) 99 i	* > 10.99.41.0/24	10.88.202.1	333	100	-	(64502 64503) 99 i	* > 10.99.99.0/24	10.88.202.1	333	100	-	(64502 64504) 99 i
	Network	Next Hop	Metric	LocPrf	Weight	Path																																																								
	* i200.0.1.100/32	201.0.25.1		100	100	6553601 i																																																								
*>e	201.0.13.1			0	6553601 i																																																									
* i200.0.2.100/32	201.0.25.1		100	100	6553601 i																																																									
*>e	201.0.13.1			0	6553601 i																																																									
*>i200.0.3.100/32	0.0.0.0		100	32768	i																																																									
Network	Next Hop	Metric	LocPref	Weight	Path																																																									
* > 10.99.31.0/24	10.88.202.1	333	100	-	(64502 64503) 99 i																																																									
* > 10.99.41.0/24	10.88.202.1	333	100	-	(64502 64503) 99 i																																																									
* > 10.99.99.0/24	10.88.202.1	333	100	-	(64502 64504) 99 i																																																									

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<p>Cisco NX-OS 6.2</p> <p>Effective date of registration: 11/13/2014</p>	<p><b>Examples</b></p> <p>This example shows how to display information about IGMP snooping queriers:</p> <pre>switch(config)# show ip igmp snooping querier Vlan IP Address      Version  Port 1     172.20.50.11    v3      fa2/1 2     172.20.40.20    v2      Router switch(config)#</pre> <p>Cisco Nexus 7000 Series NX-OS Multicast Routing Command Reference (August 2013), at 50.</p>	<p><b>Example</b></p> <ul style="list-style-type: none"> <li>This command displays the querier IP address, version, and port servicing each VLAN.</li> </ul> <pre>switch&gt;show ip igmp snooping querier Vlan IP Address      Version  Port ----- 1     172.17.0.37      v2      Po1 20    172.17.20.1        v2      Po1 26    172.17.26.1        v2      Cpu 2028  172.17.255.29      v2      Po1 switch&gt;</pre> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 1560.  Arista User Manual v. 4.13.6F (4/14/2014), at 1790.  Arista User Manual v. 4.13.7M (6/17/2014), at 1755.  Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 1860.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1874.  Arista User Manual v. 4.14.6M (1/19/2015), at 1870.  Arista User Manual v. 4.15.0F (4/18/2015), at 1878.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1872.</p>

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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<div>Examples</div> <div>This example shows how to use the show port-security command to view the status of the port security feature on a device:</div> <div>switch# show port-security</div> <div>Total Secured Mac Addresses in System (excluding one mac per port) : 0 Max Addresses limit in System (excluding one mac per port) : 8192</div> <div><table><thead><tr><th>Secure Port</th><th>MaxSecureAddr (Count)</th><th>CurrentAddr (Count)</th><th>SecurityViolation (Count)</th><th>Security Action</th></tr></thead><tbody><tr><td>Ethernet1/4</td><td>5</td><td>1</td><td>0</td><td>Shutdown</td></tr></tbody></table></div> <div>switch#</div> <div>Cisco Nexus 7000 Series NX-OS Security Command Reference (August 2013), at SEC-661.</div>	Secure Port	MaxSecureAddr (Count)	CurrentAddr (Count)	SecurityViolation (Count)	Security Action	Ethernet1/4	5	1	0	Shutdown	<div>Example</div> <div><ul style="list-style-type: none"><li>These commands enable MAC security on Ethernet interface 7, set the maximum number of assigned MAC addresses to 2, assigns two static MAC addresses to the interface, and clears the dynamic MAC addresses for the interface.</li></ul></div> <div>switch(config)#interface ethernet 7 switch(config-if-Et7)#switchport port-security switch(config-if-Et7)#switchport port-security maximum 2 switch(config-if-Et7)#exit switch(config)#mac address-table static 0034.24c2.8f11 vlan 10 interface ethernet 7 switch(config)#mac address-table static 4464.842d.17ce vlan 10 interface ethernet 7 switch(config)#clear mac address-table dynamic interface ethernet 7 switch(config)#show port-security</div> <div><table><thead><tr><th>Secure Port</th><th>MaxSecureAddr (Count)</th><th>CurrentAddr (Count)</th><th>SecurityViolation (Count)</th><th>Security Action</th></tr></thead><tbody><tr><td>Et7</td><td>2</td><td>2</td><td>0</td><td>Shutdown</td></tr></tbody></table></div> <div>Total Addresses in System: 1 switch(config)#show port-security address</div> <div>Secure Mac Address Table</div> <div><table><thead><tr><th>Vlan</th><th>Mac Address</th><th>Type</th><th>Ports</th><th>Remaining Age (mins)</th></tr></thead><tbody><tr><td>10</td><td>0034.24c2.8f11</td><td>SecureConfigured</td><td>Et7</td><td>N/A</td></tr><tr><td>10</td><td>4464.842d.17ce</td><td>SecureConfigured</td><td>Et7</td><td>N/A</td></tr></tbody></table></div> <div>Total Mac Addresses for this criterion: 2 switch(config)#</div> <div>Arista User Manual v. 4.12.4 (9/16/2013), at 520. Arista User Manual v. 4.13.6F (4/14/2014), at 624. Arista User Manual v. 4.13.7M (6/17/2014), at 624. Arista User Manual v. 4.14.3F – Rev. 2 (October 2, 2014), at 632. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 634. Arista User Manual v. 4.14.6M (1/19/2015), at 630. Arista User Manual v. 4.15.0F (4/18/2015), at 638. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 630.</div>	Secure Port	MaxSecureAddr (Count)	CurrentAddr (Count)	SecurityViolation (Count)	Security Action	Et7	2	2	0	Shutdown	Vlan	Mac Address	Type	Ports	Remaining Age (mins)	10	0034.24c2.8f11	SecureConfigured	Et7	N/A	10	4464.842d.17ce	SecureConfigured	Et7	N/A
	Secure Port	MaxSecureAddr (Count)	CurrentAddr (Count)	SecurityViolation (Count)	Security Action																																
Ethernet1/4	5	1	0	Shutdown																																	
Secure Port	MaxSecureAddr (Count)	CurrentAddr (Count)	SecurityViolation (Count)	Security Action																																	
Et7	2	2	0	Shutdown																																	
Vlan	Mac Address	Type	Ports	Remaining Age (mins)																																	
10	0034.24c2.8f11	SecureConfigured	Et7	N/A																																	
10	4464.842d.17ce	SecureConfigured	Et7	N/A																																	

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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<div>Examples</div> <div>This example shows how to use the <code>show port-security address</code> command to view information about all MAC addresses secured by port security:</div> <div>switch# show port-security address</div> <div>Total Secured Mac Addresses in System (excluding one mac per port) : 0 Max Addresses limit in System (excluding one mac per port) : 8192</div> <div>-----</div> <div>Secure Mac Address Table</div> <div><table><tr><th>Vlan</th><th>Mac Address</th><th>Type</th><th>Ports</th><th>Remaining Age (mins)</th></tr><tr><td>1</td><td>0054.AAB3.770F</td><td>STATIC</td><td>port-channel1</td><td>0</td></tr><tr><td>1</td><td>00EE.378A.ABCE</td><td>STATIC</td><td>Ethernet1/4</td><td>0</td></tr></table></div> <div>-----</div> <div>switch#</div> <div>This example shows how to use the <code>show port-security address</code> command to view the MAC addresses secured by the port security feature on the Ethernet 1/4 interface:</div> <div>switch# show port-security address interface ethernet 1/4</div> <div>Secure Mac Address Table</div> <div><table><tr><th>Vlan</th><th>Mac Address</th><th>Type</th><th>Ports</th><th>Remaining Age (mins)</th></tr><tr><td>1</td><td>00EE.378A.ABCE</td><td>STATIC</td><td>Ethernet1/4</td><td>0</td></tr></table></div> <div>-----</div> <div>switch#</div>	Vlan	Mac Address	Type	Ports	Remaining Age (mins)	1	0054.AAB3.770F	STATIC	port-channel1	0	1	00EE.378A.ABCE	STATIC	Ethernet1/4	0	Vlan	Mac Address	Type	Ports	Remaining Age (mins)	1	00EE.378A.ABCE	STATIC	Ethernet1/4	0	<div>Example</div> <div><ul style="list-style-type: none"><li>This command displays MAC addresses assigned to port-security protected interfaces.</li></ul></div> <div>switch&gt;show port-security address</div> <div>Secure Mac Address Table</div> <div>-----</div> <div><table><tr><th>Vlan</th><th>Mac Address</th><th>Type</th><th>Ports</th><th>Remaining Age (mins)</th></tr><tr><td>10</td><td>164f.29ae.4e14</td><td>SecureConfigured</td><td>Et7</td><td>N/A</td></tr><tr><td>10</td><td>164f.29ae.4f11</td><td>SecureConfigured</td><td>Et7</td><td>N/A</td></tr><tr><td>10</td><td>164f.320a.3a11</td><td>SecureConfigured</td><td>Et7</td><td>N/A</td></tr></table></div> <div>-----</div> <div>Total Mac Addresses for this criterion: 3</div> <div>switch&gt;</div>	Vlan	Mac Address	Type	Ports	Remaining Age (mins)	10	164f.29ae.4e14	SecureConfigured	Et7	N/A	10	164f.29ae.4f11	SecureConfigured	Et7	N/A	10	164f.320a.3a11	SecureConfigured	Et7	N/A	<div>Arista User Manual v. 4.12.4 (9/16/2013), at 581.</div> <div>Arista User Manual v. 4.13.6F (4/14/2014), at 686.</div> <div>Arista User Manual v. 4.13.7M (6/17/2014), at 690.</div> <div>Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 698.</div> <div>Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 700.</div> <div>Arista User Manual v. 4.14.6M (1/19/2015), at 696.</div> <div>Arista User Manual v. 4.15.0F (4/18/2015), at 704.</div> <div>Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 696.</div>
	Vlan	Mac Address	Type	Ports	Remaining Age (mins)																																											
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10	164f.320a.3a11	SecureConfigured	Et7	N/A																																												

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<p>Cisco NX-OS 6.2</p> <p>Effective date of registration: 11/13/2014</p>	<p><b>Examples</b></p> <p>This example shows how to display the EEE status on an interface:</p> <pre>switch# show interface ethernet2/6 Ethernet2/6 is down (Link not connected) admin state is up, Dedicated Interface Hardware: 10000 Ethernet, address: 0022.5579.de41 (bia 001b.54c1.af5d) MTU 1500 bytes, BW 10000000 Kbit, DLY 10 usec reliability 255/255, txload 1/255, rxload 1/255 Encapsulation ARPA, medium is broadcast auto-duplex, auto-speed, media type is 10G Beacon is turned off Auto-Negotiation is turned off Input flow-control is off, output flow-control is off Auto-mdix is turned off Rate mode is shared Switchport monitor is off EtherType is 0x8100 EEE (efficient-ethernet) : n/a Last link flapped never Last clearing of "show interface" counters never 0 interface resets 30 seconds input rate 0 bits/sec, 0 packets/sec 30 seconds output rate 0 bits/sec, 0 packets/sec Load-Interval #2: 5 minute (300 seconds)</pre> <p>Cisco Nexus 7000 Series NX-OS System Management Command Reference (August 2013), at 514.</p>	<p><b>Example</b></p> <ul style="list-style-type: none"> <li>This command assigns the MAC address of 001c.2804.17e1 to Ethernet interface 7, then displays interface parameters, including the assigned address.</li> </ul> <pre>switch(config)#interface ethernet 7 switch(config-if-Et7)#mac-address 001c.2804.17e1 switch(config-if-Et7)#show interface ethernet 7 Ethernet3 is up, line protocol is up (connected) Hardware is Ethernet, address is 001c.2804.17e1 (bia 001c.7312.02e2) Description: b.e45 MTU 9212 bytes, BW 10000000 Kbit Full-duplex, 10Gb/s, auto negotiation: off Last clearing of "show interface" counters never 5 seconds input rate 7.84 kbps (0.0% with framing), 10 packets/sec 5 seconds output rate 270 kbps (0.0% with framing), 24 packets/sec 1363799 packets input, 222736140 bytes Received 0 broadcasts, 290904 multicast 0 runts, 0 giants 0 input errors, 0 CRC, 0 alignment, 0 symbol 0 PAUSE input 2264927 packets output, 2348747214 bytes Sent 0 broadcasts, 28573 multicast 0 output errors, 0 collisions 0 late collision, 0 deferred 0 PAUSE output switch(config-if-Et7)#</pre> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 390.  Arista User Manual v. 4.13.6F (4/14/2014), at 429.  Arista User Manual v. 4.13.7M (6/17/2014), at 429.  Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 437.  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 439.  Arista User Manual v. 4.14.6M (1/19/2015), at 435.  Arista User Manual v. 4.15.0F (4/18/2015), at 443.  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 435.</p>

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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<div>show ptp clock</div> <div>To display the Precision Time Protocol (PTP) clock information, use the show ptp clock command.</div> <div>show ptp clock</div> <div><div>Syntax Description</div><div>This command has no arguments or keywords.</div></div> <div><div>Defaults</div><div>None</div></div> <div><div>Command Modes</div><div>Any command mode</div></div> <div><div>Supported User Roles</div><div>network-admin network-operator vdc-admin vdc-operator</div></div> <div><div>Command History</div><table><tr><th>Release</th><th>Modification</th></tr><tr><td>5.2(1)</td><td>This command was introduced.</td></tr></table></div> <div><div>Usage Guidelines</div><div>This command does not require a license.</div></div> <div><div>Examples</div><div>This example shows how to display the PTP clock information:</div><div>switch# show ptp clock PTP Device Type: Boundary clock Clock Identity: 0:18:ba:ff:ff:d8: e:17 Clock Domain: 0 Number of PTP ports: 2 Priority1: 255 Priority2: 255 Clock Quality: Class: 248 Accuracy: 254 Offset (log variance): 65535 Offset From Master: 0 Mean Path Delay: 0 Steps removed: 1 Local clock time: Sun Jan 15 20:57:29 2011</div></div> <div>Cisco Nexus 7000 Series NX-OS System Management Command Reference (August 2013), at 601.</div>	Release	Modification	5.2(1)	This command was introduced.	<div>Show PTP Clock and Offset</div> <div>To display the Precision Time Protocol (PTP) local clock and offset, use the show ptp clock command.</div> <div><div>The show ptp clock command displays the Precision Time Protocol (PTP) local clock and offset.</div><div>switch# show ptp clock PTP Mode: Boundary Clock Clock Identity: 0x00:1c:73:ff:ff:1e:83:24 Clock Domain: 1 Number of PTP ports: 24 Priority1: 128 Priority2: 128 Clock Quality: Class: 248 Accuracy: 0x30 Offset Scaled Log Variance: 0xffff Offset From Master: 0 Mean Path Delay: 0 Steps Removed: 0 switch#</div></div> <div>Arista User Manual v. 4.12.4 (9/16/2013), at 233. Arista User Manual v. 4.13.6F (4/14/2014), at 267. Arista User Manual v. 4.13.7M (6/17/2014), at 267. Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 275. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 277. Arista User Manual v. 4.14.6M (1/19/2015), at 273. Arista User Manual v. 4.15.0F (4/18/2015), at 257. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 257.</div>
	Release	Modification				
5.2(1)	This command was introduced.					

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<div>Cisco NX-OS 6.2</div> <div>Effective date of registration: 11/13/2014</div>	<div><div>show ptp parent</div><div>To display information about the parent and grand master of the Precision Time Protocol (PTP) clock, use the <code>show ptp parent</code> command.</div><div>show ptp parent</div><div><div>Syntax Description</div><div>This command has no arguments or keywords.</div></div><div><div>Defaults</div><div>None</div></div><div><div>Command Modes</div><div>Any command mode</div></div><div><div>Supported User Roles</div><div>network-admin network-operator vdc-admin vdc-operator</div></div><div><div>Command History</div><table><tr><th>Release</th><th>Modification</th></tr><tr><td>5.2(1)</td><td>This command was introduced.</td></tr></table></div><div><div>Usage Guidelines</div><div>This command does not require a license.</div></div><div><div>Examples</div><div>This example shows how to display information about the parent and grand master of the PTP clock:</div><div>switch# show ptp parent Parent Clock: Parent Clock Identity: 0:18:ba:ff:ff:d8: e:16 Parent Port Number: 1546 Observed Parent Offset (log variance): N/A Observed Parent Clock Phase Change Rate: N/A  Grandmaster Clock: Grandmaster Clock Identity: 0:18:ba:ff:ff:d8: e:16 Grandmaster Clock Quality: Class: 248 Accuracy: 254 Offset [log variance]: 65535 Priority1: 255 Priority2: 255</div></div></div>	Release	Modification	5.2(1)	This command was introduced.	<div><div>Show PTP Parent Information</div><div>To display information about the parent and grand master of the Precision Time Protocol (PTP) clock, use the <code>show ptp parent</code> command.</div><div><ul style="list-style-type: none"><li>The <code>show ptp parent</code> command displays information about the parent and grand master of the Precision Time Protocol (PTP) clock.</li></ul></div><div>switch# show ptp parent Parent Clock: Parent Clock Identity: 0x00:1c:73:ff:ff:00:72:40 Parent Port Number: 0 Parent IP Address: N/A Observed Parent Offset (log variance): N/A Observed Parent Clock Phase Change Rate: N/A  Grandmaster Clock: Grandmaster Clock Identity: 0x00:1c:73:ff:ff:00:72:40 Grandmaster Clock Quality: Class: 248 Accuracy: 0x30 Offset Scaled Log Variance: 0xffff Priority1: 128 Priority2: 128 switch#</div><div>Arista User Manual v. 4.12.4 (9/16/2013), at 233-234. Arista User Manual v. 4.13.6F (4/14/2014), at 267. Arista User Manual v. 4.13.7M (6/17/2014), at 267. Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 275. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 277. Arista User Manual v. 4.14.6M (1/19/2015), at 273.  Arista User Manual v. 4.15.0F (4/18/2015), at 257. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 257.</div></div>
	Release	Modification				
	5.2(1)	This command was introduced.				
	Cisco Nexus 7000 Series NX-OS System Management Command Reference (August 2013), at 607.					



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<div>Cisco NX-OS 6.2</div> <div>Effective date of registration: 11/13/2014</div>	<div><div>show ptp parent</div><div>To display information about the parent and grand master of the Precision Time Protocol (PTP) clock, use the show ptp parent command.</div><div>show ptp parent</div><div><div>Syntax Description</div><div>This command has no arguments or keywords.</div></div><div><div>Defaults</div><div>None</div></div><div><div>Command Modes</div><div>Any command mode</div></div><div><div>SupportedUserRoles</div><div>network-admin network-operator vdc-admin vdc-operator</div></div><div><div>Command History</div><table><tr><th>Release</th><th>Modification</th></tr><tr><td>5.2(1)</td><td>This command was introduced.</td></tr></table></div><div><div>Usage Guidelines</div><div>This command does not require a license.</div></div><div><div>Examples</div><div>This example shows how to display information about the parent and grand master of the PTP clock:</div><div>switch# show ptp parent Parent Clock: Parent Clock Identity: 0:18:ba:ff:ff:d8: e:16 Parent Port Number: 1546 Observed Parent Offset (log variance): N/A Observed Parent Clock Phase Change Rate: N/A  Grandmaster Clock: Grandmaster Clock Identity: 0:18:ba:ff:ff:d8: e:16 Grandmaster Clock Quality: Class: 248 Accuracy: 254 Offset (log variance): 65535 Priority1: 255 Priority2: 255</div></div></div>	Release	Modification	5.2(1)	This command was introduced.	<div><div>show ptp parent</div><div>The show ptp parent command displays information about the parent and grand master of the Precision Time Protocol (PTP) clock.</div><div>Platform Arad, FM6000 Command Mode Privileged EXEC</div><div><div>Command Syntax</div><div>show ptp parent</div></div><div><div>Examples</div><div><ul style="list-style-type: none"><li>This command shows how to display information about the parent and master of the PTP clock.</li></ul><div>switch# show ptp parent Parent Clock: Parent Clock Identity: 0x00:1c:73:ff:ff:00:72:40 Parent Port Number: 0 Parent IP Address: N/A Observed Parent Offset (log variance): N/A Observed Parent Clock Phase Change Rate: N/A  Grandmaster Clock: Grandmaster Clock Identity: 0x00:1c:73:ff:ff:00:72:40 Grandmaster Clock Quality: Class: 248 Accuracy: 0x30 Offset Scaled Log Variance: 0xffff Priority1: 128 Priority2: 128 switch#</div></div></div></div> <div><div>Arista User Manual v. 4.12.4 (9/16/2013), at 301.</div><div>Arista User Manual v. 4.13.6F (4/14/2014), at 344.</div><div>Arista User Manual v. 4.13.7M (6/17/2014), at 344.</div><div>Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 352.</div><div>Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 354.</div><div>Arista User Manual v. 4.14.6M (1/19/2015), at 350.</div><div>Arista User Manual v. 4.15.0F (4/18/2015), at 334.</div><div>Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 334.</div></div>
	Release	Modification				
5.2(1)	This command was introduced.					
<div>Cisco Nexus 7000 Series NX-OS System Management Command Reference (August 2013), at 607.</div>						

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Cisco NX-OS 6.2  Effective date of registration: 11/13/2014	<div><div>show ptp time-property</div><div>To display the Precision Time Protocol (PTP) clock properties, use the show ptp time-property command.</div><div>show ptp time-property</div></div> <div><div>Syntax Description</div><div>This command has no arguments or keywords.</div></div> <div><div>Defaults</div><div>None</div></div> <div><div>Command Modes</div><div>Any command mode</div></div> <div><div>SupportedUserRoles</div><div>network-admin network-operator vdc-admin vdc-operator</div></div> <div><div>Command History</div><table><tr><th>Release</th><th>Modification</th></tr><tr><td>5.2(1)</td><td>This command was introduced.</td></tr></table></div> <div><div>Usage Guidelines</div><div>This command does not require a license.</div></div> <div><div>Examples</div><div>This example shows how to display the PTP clock properties: switch# show ptp time-property PTP CLOCK TIME PROPERTY: Current UTC Offset valid: 0 Current UTC Offset: 33 Leap59: 0 Leap61: 0 Time Traceable: 0 Frequency Traceable: 0 PTP Timescale: 0 Time Source: 0xA0 (internal oscillator)</div></div>	Release	Modification	5.2(1)	This command was introduced.	<div><div>Show PTP Clock Properties</div><div>To display the Precision Time Protocol (PTP) clock properties, use the show ptp time-property command.</div><div><ul style="list-style-type: none"><li>The show ptp time-property command displays the Precision Time Protocol (PTP) clock properties. switch# show ptp time-property Current UTC offset valid: False Current UTC offset: 0 Leap 59: False Leap 61: False Time Traceable: False Frequency Traceable: False PTP Timescale: False Time Source: 0x0 switch#</li></ul></div></div> <div>Arista User Manual v. 4.12.4 (9/16/2013), at 234. Arista User Manual v. 4.13.6F (4/14/2014), at 267-268. Arista User Manual v. 4.13.7M (6/17/2014), at 267-268. Arista User Manual v. 4.14.3F – Rev. 2 (October 2, 2014), at 275-76. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 277. Arista User Manual v. 4.14.6M (1/19/2015), at 273. Arista User Manual v. 4.15.0F (4/18/2015), at 257. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 257.</div>
	Release	Modification				
5.2(1)	This command was introduced.					

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<div>Cisco NX-OS 6.2</div> <div>Effective date of registration: 11/13/2014</div>	<div><div>show ptp time-property</div><div>To display the Precision Time Protocol (PTP) clock properties, use the show ptp time-property command.</div><div>show ptp time-property</div><div><div>Syntax Description</div><div>This command has no arguments or keywords.</div></div><div><div>Defaults</div><div>None</div></div><div><div>Command Modes</div><div>Any command mode</div></div><div><div>SupportedUserRoles</div><div>network-admin network-operator vdc-admin vdc-operator</div></div><div><div>Command History</div><table><tr><th>Release</th><th>Modification</th></tr><tr><td>5.2(1)</td><td>This command was introduced.</td></tr></table></div><div><div>Usage Guidelines</div><div>This command does not require a license.</div></div><div><div>Examples</div><div>This example shows how to display the PTP clock properties:</div><div>switch# show ptp time-property PTP CLOCK TIME PROPERTY: Current UTC Offset valid: 0 Current UTC Offset: 33 Leap59: 0 Leap61: 0 Time Traceable: 0 Frequency Traceable: 0 PTP Timescale: 0 Time Source: 0xA0 (internal Oscillator)</div></div></div>	Release	Modification	5.2(1)	This command was introduced.	<div><div>show ptp time-property</div><div>The show ptp time-property command displays the Precision Time Protocol (PTP) clock properties.</div><div>PlatformArad, FM6000 Command ModePrivileged EXEC</div><div><div>Command Syntax</div><div>show ptp time-property</div></div><div><div>Examples</div><div><ul style="list-style-type: none"><li>This command shows the PTP clock properties.</li></ul><div>switch# show ptp time-property Current UTC offset valid: False Current UTC offset: 0 Leap 59: False Leap 61: False Time Traceable: False Frequency Traceable: False PTP Timescale: False Time Source: 0x0 switch#</div></div></div></div> <div><div>Arista User Manual v. 4.12.4 (9/16/2013), at 303.</div><div>Arista User Manual v. 4.13.6F (4/14/2014), at 346.</div><div>Arista User Manual v. 4.13.7M (6/17/2014), at 346.</div><div>Arista User Manual v. 4.14.3F – Rev. 2 (10/2/2014), at 354.</div><div>Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 356.</div><div>Arista User Manual v. 4.14.6M (1/19/2015), at 352.</div><div>Arista User Manual v. 4.15.0F (4/18/2015), at 336.</div><div>Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 336.</div></div>
	Release	Modification				
5.2(1)	This command was introduced.					

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<p>Cisco NX-OS 6.2</p> <p>Effective date of registration: 11/13/2014</p>	<p><b>Examples</b></p> <p>This example shows how to display the SNMP information:</p> <pre>switch(config)# show snmp sys contact: sys location: anyplace, Anywhere  0 SNMP packets input   0 Bad SNMP versions   0 Unknown community name   0 Illegal operation for community name supplied   0 Encoding errors   0 Number of requested variables   0 Number of altered variables   0 Get-request PDUs   0 Get-next PDUs   0 Set-request PDUs 0 SNMP packets output   0 Too big errors   0 No such name errors   0 Bad values errors   0 General errors</pre> <p>Cisco Nexus 7000 Series NX-OS System Management Command Reference (August 2013), at 634.</p>	<p><b>Example</b></p> <ul style="list-style-type: none"> <li>This command configures <i>xyz-1234</i> as the chassis-ID string, then displays the result.</li> </ul> <pre>switch(config)#snmp-server chassis-id xyz-1234 switch(config)#show snmp Chassis: xyz-1234 &lt;---chassis ID  8 SNMP packets input   0 Bad SNMP version errors   0 Unknown community name   0 Illegal operation for community name supplied   0 Encoding errors   8 Number of requested variables   0 Number of altered variables   4 Get-request PDUs   4 Get-next PDUs   0 Set-request PDUs 21 SNMP packets output   0 Too big errors   0 No such name errors   0 Bad value errors   0 General errors   8 Response PDUs   0 Trap PDUs SNMP logging: enabled Logging to taccon.162 SNMP agent enabled switch(config)#</pre> <p>Arista User Manual v. 4.12.4 (9/16/2013), at 1705-1706.  Arista User Manual v. 4.13.6F (4/14/2014), at 1895-1896.  Arista User Manual v. 4.13.7M (6/17/2014), at 1923-1924.  Arista User Manual v. 4.14.3F (Rev. 2) (10/2/2014), at 1967-68  Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1981-1982.  Arista User Manual v. 4.14.6M (1/19/2015), at 1977-1978.  Arista User Manual v. 4.15.0F (4/18/2015), at 1985-1986  Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1979-1980.</p>

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Cisco NX-OS 5.0  Effective date of registration: 11/13/2014	<div><div>show snmp engineID</div><div>To display the Simple Network Management Protocol (SNMP) engine ID, use the show snmp engineID command.<div>show snmp engineID</div></div><div><div>Syntax Description</div><div>This command has no arguments or keywords.</div></div><div><div>Defaults</div><div>None</div></div><div><div>Command Modes</div><div>Any command mode</div></div><div><div>Supported User Roles</div><div>network-admin network-operator vdc-admin vdc-operator</div></div><div><div>Command History</div><table><tr><th>Release</th><th>Modification</th></tr><tr><td>4.0(1)</td><td>This command was introduced.</td></tr></table></div><div><div>Usage Guidelines</div><div>This command does not require a license.</div></div><div><div>Examples</div><div>This example shows how to display the SNMP engine ID:<div>switch(config)# show snmp engineID Local SNMP engineID: [Hex] 80000009030005300A0B0C [Dec] 128:000:000:009:003:000:005:048:010:011:012</div></div></div><div><div>Related Commands</div><table><tr><th>Command</th><th>Description</th></tr><tr><td>snmp-server user</td><td>Configures SNMP target notification users.</td></tr></table></div></div>	Release	Modification	4.0(1)	This command was introduced.	Command	Description	snmp-server user	Configures SNMP target notification users.	<div><div>show snmp engineID</div><div>The show snmp engineID command displays the identification of the local Simple Network Management Protocol (SNMP) engine and of all remote engines that are configured on the switch.<div>Platform all Command Mode EXEC</div></div><div><div>Command Syntax</div><div>show snmp engineID</div></div><div><div>Example</div><div><ul style="list-style-type: none"><li>This command displays the ID of the local SNMP engine.</li></ul><div>switch&gt;show snmp engineid Local SNMP EngineID: f5717f001c730436d700 switch&gt;</div></div></div></div> <div>Arista User Manual v. 4.11.1 – Rev 2 (1/22/2013), at 1363. Arista User Manual v. 4.11.2.1 (3/1/2013), at 1443. Arista User Manual v. 4.12.4 (9/16/2013), at 1716. Arista User Manual v. 4.13.6F (4/14/2014), at 1906. Arista User Manual v. 4.13.7M (6/17/2014), at 1934. Arista User Manual v. 4.14.3F – Rev. 2 (October 2, 2014), at 1978. Arista User Manual v. 4.14.5F – Rev. 2 (12/22/2014), at 1991. Arista User Manual v. 4.14.6M (1/19/2015), at 1987. Arista User Manual v. 4.15.0F (4/18/2015), at 1995. Arista User Manual v. 4.15.0F – Rev. 2 (4/27/2015), at 1989.</div>
	Release	Modification								
4.0(1)	This command was introduced.									
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